MIDDLE EAST@WAR No.46

CZECHOSLOVAK ARMS EXPORTS TO THE MIDDLE EAST

VOLUME 3: EGYPT 1948–1989

Martin Smisek

MIDDLE EAST@WAR SERIES

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In order to simplify the use of this book, all names, locations and geographic designations are as provided in *The Times World Atlas*, or other traditionally accepted major sources of reference, as of the time of described events. Similarly, Arabic names are romanised and transcripted rather than transliterated. For example: the definite article al- before words starting with 'sun letters' is given as pronounced instead of simply as al- (which is the usual practice for non-Arabic speakers in most English-language literature and media). Instead of using the diacritical marks to represent the letter 'ayn, double a is used, while names like 'Faisal/Feisal' are spelled as 'Faysal'.

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ABBREVIATIONS

GBP	Great British Pound (pound sterling)
HTS	*Hlavní technická správa* (Main Technical Administration)
KSČ	*Komunistická strana Československa* (Communist Party of Czechoslovakia)
MCS	Military College for Sciences
MTC	Military Technical College
Svazarm	*Svaz pro spolupráci s armádou* (Union for Cooperation with the Army)
UAR	United Arab Republic
UARAF	United Arab Republic Air Force
USSR	Union of Soviet Socialist Republics
ÚV KSČ	*Ústřední výbor Komunistické strany Československa* (Central Committee of the Communist Party of Czechoslovakia)
VAAZ	*Vojenská akademie Antonína Zápotockého* (Antonín Zápotocký Military Academy)
VFR	visual flight rules
VKR	*Vojenská kontrarozvědka* (Military Counterintelligence)
VTA AZ	*Vojenská technická akademie Antonína Zápotockého* (Antonín Zápotocký Military Technical Academy)
ZF VAAZ	*Zahraniční fakulta Vojenské akademie Antonína Zápotockého* (Foreign Faculty of the Antonín Zápotocký Military Academy)

INTRODUCTION

Before the Second World War, Czechoslovakia was one of the largest arms producers and exporters in the world. Its customers included countries in Europe (especially the Baltics and the Balkans), Latin America, the Middle East and Asia. When, after the conflict, Czechoslovak arms factories tried to restore their former position, they found that it would not be an easy task. Because of the emerging Cold War, the United States blocked upcoming deals with Latin American countries. In Europe, the Baltic states were absorbed into the Soviet Union, and Moscow's influence in the Balkans meant that the needs of local militaries were met with Soviet arms deliveries. Thus, the only remaining area with the possibility of Czechoslovak arms supplies was de facto the Middle East.

In the late 1940s, tensions in the area between Arabs and Jews began to escalate and eventually culminated in the 1948 Arab-Israeli War. Both sides, including the Egyptians, tried to buy weapons from all around the world, including Czechoslovakia. In the same time frame, Czechoslovakia became an integral part of the Soviet Bloc which was foreshadowed by the communist coup d'état in February 1948. In the end, the communist-led Czechoslovak government decided, with backing from Moscow, to prefer the State of Israel in deliveries of armament. However, solid relations between Czechoslovakia and Israel were not to last forever. When it became clear that Israel would not become a communist country, Prague limited relations with the Jewish state. Moreover, in July 1950, the Czechoslovak Ministry of National Defence prohibited the export of all Czechoslovak weapons to Israel.

During the early 1950s, Prague followed Soviet wishes and invested large sums of money into the establishment of a massive arms industry, primarily designed for the licenced production of Soviet guns, tanks and fighter aircraft. The main recipients of those weapons were Czechoslovakia and other countries of the Soviet Bloc. However, during the mid-1950s, European communist states began to have problems buying and paying for large amounts of arms from Czechoslovakia. At the same time, demand for Czechoslovak arms began to rise in Third World countries, including some Arab states in the Middle East. Thus, thanks to Czechoslovakia, in 1955 Syria became the first Arab country to receive arms from any communist state. Egypt received Czechoslovak weapons only a few months later, as part of a huge supply of military hardware in which the Soviet Union also secretly participated.

1
EGYPT (OPERATION 105, COUNTRY 673, OPERATION 711)

In 1922, the Kingdom of Egypt became a nominally independent state, but the United Kingdom retained control of its foreign relations, communications, and the armed forces until 1936. The British continued to maintain a military presence and political advisors in Egypt until the revolution of 1952 following which, on 18 June 1953, the revolutionaries formally abolished the monarchy and declared Egypt a republic. Czechoslovakia had recognised Egyptian independence in 1922. The Czechoslovak embassy was established in Cairo during the next year and the Czechoslovak government in exile in Great Britain maintained diplomatic relations with the Kingdom of Egypt even during the Second World War.[1]

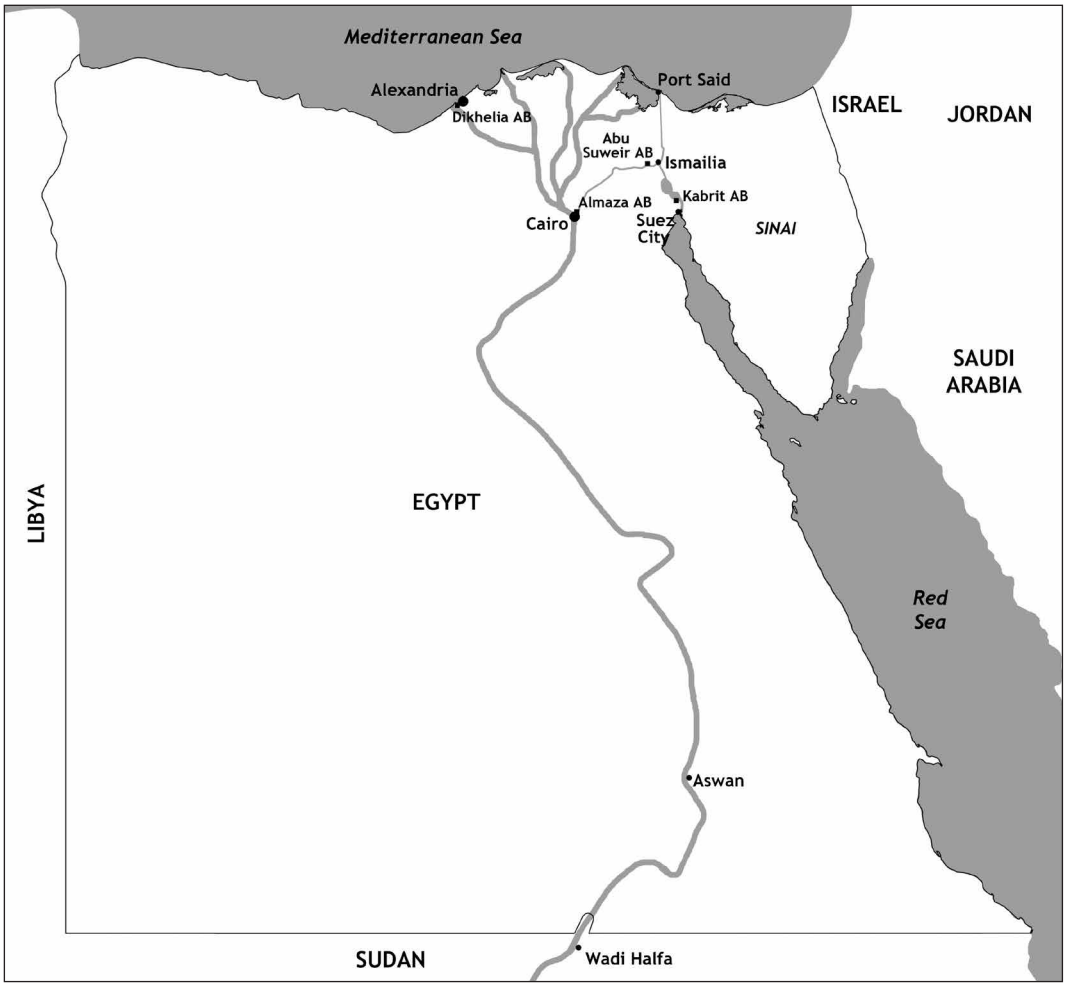
The first deliveries of Czechoslovak weapons to the Kingdom of Egypt took place in the 1930s. In the period from 1936 to 1938, Zbrojovka Brno delivered 1,000 BREN machine guns to Egypt and on 15 February 1939, a contract was signed for the supply of another 1,000 BREN machine guns with a delivery date in 1940. However, this trade was terminated prematurely by the German occupation of Czechoslovakia because the Germans banned the export of Czechoslovak weapons to countries under British influence.[2]

MONARCHIST INTEREST IN CZECHOSLOVAK WEAPONS

Czechoslovakia supported the establishment of an independent Israel in 1947, nevertheless Egyptian officials were interested in the acquisition of Czechoslovak armament for the future clash with Jewish forces during the same year. On 14 May 1948, the Egyptians ordered 7,250 ČZ 247 submachine guns from Česká zbrojovka with the request to deliver the first 600 submachine guns, including ammunition, as quickly as possible. However, the officials of the Czechoslovak Ministry of Foreign Affairs (*Ministerstvo zahraničních věcí*) were informed about the shipment and spoiled the whole business. Although Prague supported fully Israel during the 1948 Arab-Israeli War, Minister of Foreign Affairs Vladimír Clementis proposed at a government meeting on 16 November 1948 to supply the Egyptian government 'with some rifles of an older model, in which there would be no danger at all since the Egyptian troops could not handle the rifles anyway'. Despite such opportunistic proposals, no Czechoslovak weapons were delivered to the Kingdom of Egypt during the conflict with Israel.

The situation began to change from July 1950 when Prague banned exports of its arms to Israel. On 24 October 1951, Czechoslovak and Egyptian representatives signed a new trade and payment agreement in Prague. The document had a confidential protocol in which it was stipulated that Czechoslovakia would deliver to

the Kingdom of Egypt arms and ammunition worth some 6 million EGP in exchange for Egyptian cotton. The Egyptians wanted to obtain 200 tanks, 200 armoured vehicles, 60 to 100 fighter aircraft, 2,000 trucks, 1,000 off-road vehicles, and different types of artillery armament. On 15 November 1951, Egyptian *Chargé d'Affaires* in Prague, Youssef M Kabil, held a dinner for Deputy Prime Minister and Minister of Foreign Affairs Viliam Široký, Minister of Foreign Trade Antonín Gregor, and several senior departmental officials, and persuaded them to approve the arms deal. However, he received only a negative reply on 5 December 1951 in which Gregor stated that the needs of the Czechoslovak Army (*Československá armáda*) had the priority. Between 1952 and 1953, Egypt tried several times in various ways to establish contact with Czechoslovak top officials in order to purchase weapons. However, all attempts ended with failure.[3]



A map of Egypt with major cities, air bases and other facilities where Czechoslovak advisors served during the 1950s, 1960s, and 1970s. (Map by Tom Cooper)

2
THE FIRST CZECHOSLOVAK ARMS DEAL

The Egyptian revolution carried out by the Free Officers Movement, a group of army officers led by Mohammed Naguib and Gamal Abdel Nasser, took place on 23 July 1952. Its initial aim was the overthrow of King Farouk. However, the Free Officers Movement had more political ambitions, and its further steps led, among others, to the abolishment of the constitutional monarchy, the establishment of a republic, and the termination of the British occupation of the country. The new Egyptian establishment adopted a policy characterised by Arab nationalism and international non-alignment. On 18 June 1953, the Revolution Command Council declared Egypt a republic, abolishing the monarchy and appointing General Naguib as the first president and prime minister. Gamal Abdel Nasser became appointed deputy premier and minister of the interior.

In spite of changes in Cairo's political landscape, Egyptian desire to obtain arms in Czechoslovakia persisted. Unlike the previous instances, this time, Prague was ready to comply with Egyptian wishes. Thus, on 14 February 1955, the Politburo (*Politické byro*) of the Central Committee of the Communist Party of Czechoslovakia (*Ústřední výbor Komunistické strany Československa*, ÚV KSČ) approved the possible sale of 200 7.65mm pistols with up to 120,000 rounds of ammunition. At that time, Egypt was on the list of capitalist countries into which the export of Czechoslovak armament (except sports and hunting weapons) was prohibited. Hence, the approval of the highest Czechoslovak communist body was needed. Among the reasons for the export permission were a small number of pistols and a good reference for potential forthcoming trade since Czechoslovak small calibre pistols and hunting rifles were traditional commodities on the Egyptian market.[1]

The serious negotiations dealing with possible shipments of large quantities of Czechoslovak arms to Egypt commenced in March 1955, after the Israeli attack into Gaza (Operation Black Arrow which was undertaken on 28 February 1955). Back then in Egypt, the Czechoslovak delegation met Assistant for Military Commerce to Egyptian Minister of War General Hassan Ragab who submitted a list with the required number of military aircraft, tanks, and artillery pieces. During the following month, on 6 April, General Ragab contacted the Soviet defence attaché to Egypt in the same matter. Following these developments, a series of talks between Egyptians on one side and Czechoslovak and Soviet representatives on the other were held under the conditions of the most stringent secrecy. The basic principles of the future contract were approved by the Politburo ÚV KSČ on 8 August 1955. Czechoslovakia was to act not only as a direct supplier but as a middleman for Soviet deliveries of arms for Egyptian armed forces as well.

On 20 August 1955, the Egyptian delegation led by Director of the Bureau of the Commander-in-Chief General Mohammed Hafez Ismail arrived in Prague to hold meetings with the Czechoslovak-Soviet committee and to discuss the details of the agreement. Upon attending the presentation of armoured vehicles, combat aircraft,

and artillery weapons, and an additional round of negotiations, the first Czechoslovak-Egyptian arms deal for the delivery of armament and military assistance to the overall value of 45.7 million GBP (921.3 million CSK) was signed on 12 September 1955. A corresponding agreement between Prague and Moscow was concluded four days later (the Czechoslovak share was 20.4 million GBP or 412.3 million CSK). The Czechoslovak-Egyptian arms deal covered shipments of large quantities of mostly Soviet armament and ammunition (either directly from Soviet production or their equivalents manufactured under licence in Czechoslovakia) together with spare parts, logistics, and support equipment. It included the provision for the training of Egyptian soldiers in Czechoslovakia or Egypt with the help of Czechoslovak advisors. The Egyptians were to pay 20 percent of the contract's value in foreign (hard) currency and the rest in goods (cotton, rice, phosphates, flax, leather, bananas, dried dates, and citruses). The credit due to pay during the years 1956 to 1958 with an interest rate of 2 percent was provided for 75 percent of the contract's value. Czechoslovakia unsuccessfully demanded that one-third of the contract's value should be paid in foreign currency and the rest in Egyptian goods. In the end, the complete Soviet share was paid in goods while Czechoslovakia received part of the instalments in foreign currency worth 184,262,400 CSK.

The shipments from Czechoslovakia were to be carried out through Soviet territory in four stages between 5 October 1955 to 5

Table 1: Military hardware contracted within the frame of the Czechoslovak-Egyptian arms agreement from 12 September 1955[5]

Type	Number of examples	Note
vz. 43, 57mm anti-tank gun	200	delivery from Czechoslovakia
vz. 31/37, 122mm gun	50	delivery from Czechoslovakia
vz. 38, 122mm howitzer	80	delivery from Czechoslovakia
M1939 (61-K), 37mm anti-aircraft gun	120	delivery from the USSR, Czechoslovak designation vz. 39
M1944 (KS-1), 85mm anti-aircraft gun	50	delivery from the USSR
vz. 51, 130mm multiple rocket launcher	24	delivery from Czechoslovakia
P-8, early warning radar	4	delivery from the USSR
T-34/85, medium tank	200	delivery from Czechoslovakia
SD-100, self-propelled gun	50	delivery from Czechoslovakia
armoured recovery vehicle	6	delivery from the USSR
BTR-152, armoured personnel carrier	200	delivery from the USSR
MiG-15bis, fighter	80	delivery from Czechoslovakia
MiG-15UTI, combat trainer	6	delivery from Czechoslovakia
Il-28, bomber	45	delivery from the USSR
Il-28U, training aircraft	4	delivery from the USSR
Yak-11, training aircraft	25	delivery from Czechoslovakia
Il-14, passenger aircraft	20	delivery from the USSR
Raketa, parachute	100	delivery from Czechoslovakia
MPLK-49, parachute	135	delivery from the USSR
parachute with life raft and oxygen device	24	delivery from the USSR
aircraft camera for day photography	6	delivery from the USSR
aircraft camera for night photography	4	delivery from the USSR
film for aircraft camera	500 rolls	delivery from the USSR
towing target for air-to-air gunnery	4 sets	delivery from the USSR
towing target for ground-to-air gunnery	4 sets	delivery from the USSR
40-tonne low loader trailer with the tractor	60	delivery from the USSR
60-tonne low loader trailer with the tractor	32	delivery from the USSR
mobile workshops, gun tractors, airfield ground support equipment	2,025,484 GBP	delivery from the USSR and Czechoslovakia
anti-personnel mine	100,000	delivery from Czechoslovakia (and the USSR?)
cargo ship (within 3,000 tonnes)	1	delivery from the USSR
minesweeper	4	delivery from the USSR
ammunition, fuel, lubricants, spare engines, spare parts, tools for maintenance and repairs, teaching aids	13,511,420 GBP	delivery from the USSR and Czechoslovakia
nitric acid	1,000 tonnes	delivery from the USSR

February 1956. Moscow then secured the transport of the military hardware from Soviet ports on the Black Sea to the Egyptian port of Alexandria using its own cargo ships. Due to the extreme time urgency (the last shipment with arms was to arrive in Egypt by 1 March 1956), almost all Czechoslovak arms for Egypt came from the inventory of the Czechoslovak People's Army (*Československá lidová armáda*) or were diverted directly from the production lines. The scope of contracted military materiel is provided in Table 1 (the actual deliveries from Czechoslovakia are listed in Table 12).[2]

Nasser proudly announced the deal in a speech at the military exhibition on 27 September 1955. The news caused great shock and a wave of rage in the West, where this was seen as a major increase in Soviet influence in the Middle East. On the other hand, the impression of Nasser in the Middle East as the Arab leader defying the West was enhanced. However, the public announcement created great consternation in Prague which requested consultation in Moscow. The Soviets advised the Czechoslovak communist leadership on 2 October that it needed to bolster Nasser's stance, 'otherwise, it would harm Egypt, the Arab world and us too'. The Politburo ÚV KSČ did what Moscow wanted and duly let issue a public statement in which Czechoslovakia supported the Egyptian right to obtain weapons where Cairo found suitable.[3]

The dispatch of arms from Czechoslovakia to Egypt was carried out during just four months (from October 1955 to January 1956) in four partial shipments encompassing an overall 639 railway cars from the warehouses of the Czechoslovak People's Army and additional 462 railway cars that were sent off from Czechoslovak arms factories.[4]

INITIAL TRAINING COURSES IN CZECHOSLOVAKIA

The assembly and subsequent flight testing of delivered Yak-11, MiG-15, and Il-28 airplanes were carried out on the basis of Contract No. 155-A which was signed on 15 October 1955.[6] While the first dismantled MiG-15bis fighters and Il-28 bombers were heading to Egypt, a small group of Egyptian instructor pilots arrived in Czechoslovakia to undergo hastily organised rudimentary conversion training. Egyptian bomber instructors Fawzi, Hilmi, and Safwat participated in the conversion on the Il-28 bomber which took place at the Přerov air base and was led by the commander of the local 25th Bombing Aviation Regiment (*25. bombardovací letecký pluk*), Major Josef Sladký. The course commenced on 10

Table 2: Training courses for Egyptian military personnel in Czechoslovakia, December 1955 – September 1956[9]

Period	Training course	Training facility	Location
3 December 1955 – 24 December 1955	operation and maintenance of RM-31T radio station (for T-34/85 and SD-100)	Antonín Zápotocký Military Technical Academy	Brno
3 December 1955 – 24 December 1955	training on T-34/85 tank – description and operation	Antonín Zápotocký Military Technical Academy	Brno
3 December 1955 – 24 December 1955	training on T-34/85 tank – armament and firing	Antonín Zápotocký Military Technical Academy	Brno
15 December 1955 – 19 January 1956	training on SD-100 self-propelled gun	Antonín Zápotocký Military Technical Academy	Brno
5 January 1956 – 1 February 1956	operation of vz. 31/37 gun and vz. 38 howitzer	Antonín Zápotocký Military Technical Academy	Brno
18 January 1956 – 4 February 1956	operation of vz. 43 anti-tank gun	Antonín Zápotocký Military Technical Academy	Brno
18 January 1956 – 11 February 1956	operation of vz. 39 anti-aircraft gun	Antonín Zápotocký Military Technical Academy	Brno
17 January 1956 – 23 February 1956	training of mechanics for Il-28 bomber	46th Bombing Aviation Division	Přerov
17 January 1956 – 26 February 1956	training of mechanics for Yak-11 trainer	Aviation Training School	Liptovský Mikuláš
17 January 1956 – 26 February 1956	training of mechanics for MiG-15bis fighter	Aviation Training School	Liptovský Mikuláš
17 January 1956 – 23 February 1956	training of mechanics for electrical equipment of MiG-15bis fighter	Aviation Training School	Liptovský Mikuláš
17 January 1956 – 23 February 1956	training of mechanics for electrical equipment of Yak-11 trainer	Aviation Training School	Liptovský Mikuláš
17 January 1956 – 23 February 1956	training of mechanics for electrical equipment of Il-28 bomber	46th Bombing Aviation Division and Aviation Training School	Přerov and Liptovský Mikuláš
17 January 1956 – 23 February 1956	training of mechanics for aircraft instruments	Aviation Training School	Liptovský Mikuláš
17 January 1956 – 23 February 1956	training of mechanics for hydraulic systems	Aviation Training School	Liptovský Mikuláš
16 January 1956 – 29 February 1956	repairs of RD-45F, VK-1, and ASh-21 aircraft engines	Aircraft Repair Plant Malešice	Malešice (district of Prague)

Table 2: Training courses for Egyptian military personnel in Czechoslovakia, December 1955 – September 1956[9] (*continued*)			
16 January 1956- 29 February 1956	repairs of Yak-11, MiG-15bis, and Il-28	Aircraft Repair Plant Kbely	Kbely
28 December 1955- 4 February 1956	repairs of T-34/85 tank and SD-100 self-propelled gun (engine, hull, armament)	Klement Gottwald Tank Training School	Vyškov
7 February 1956- 31 March 1956	maintenance and repairs of vz. 31/37 gun, vz. 38 howitzer, vz. 43 anti-tank gun, vz. 51 multiple rocket launcher, and vz. 39 anti-aircraft gun	Antonín Zápotocký Military Technical Academy and 5th Ammunition Base	Brno
20 January 1956- 18 April 1956	ammunition course	Antonín Zápotocký Military Technical Academy	Brno
18 March 1956- 14 May 1956	operation of vz. 44 anti-aircraft gun	Antonín Zápotocký Military Technical Academy	Brno
18 March 1956- 14 May 1956	operation of PUAZO-4a fire control director	Antonín Zápotocký Military Technical Academy	Brno
18 March 1956- 14 May 1956	operation of SON-4 fire control radar	Antonín Zápotocký Military Technical Academy	Brno
18 March 1956- 14 May 1956	technician for vz. 44 anti-aircraft gun, PUAZO-4a fire control director, and SON-4 fire control radar	Antonín Zápotocký Military Technical Academy	Brno
20 May 1956- 20 July 1956	training of ammunition experts	Antonín Zápotocký Military Technical Academy	Brno
20 May 1956- 20 July 1956	operation of vz. 44 anti-aircraft gun	Antonín Zápotocký Military Technical Academy	Brno
20 May 1956- 20 July 1956	operation of PUAZO-4a fire control director	Antonín Zápotocký Military Technical Academy	Brno
20 May 1956- 27 July 1956	repairs of vz. 44 anti-aircraft gun	Antonín Zápotocký Military Technical Academy	Brno
20 May 1956- 27 July 1956	repairs of PUAZO-4a fire control director	Antonín Zápotocký Military Technical Academy	Brno
20 May 1956- 27 July 1956	operation of SON-4 fire control radar	Antonín Zápotocký Military Technical Academy	Brno
24 April 1956- 28 September 1956	repairs of SON-4 fire control radar	184th Anti-Aircraft Artillery Regiment	Brno

October 1955 and was finished on the 29th of the same month. The Egyptian aviators completed 42 flights (28 of them in Il-28U trainers) and spent 8.46 flight hours in the air. Simultaneously, Esmat Sophi and Hussein Sedky underwent conversion training on the Yak-11, MiG-15UTI, and MiG-15bis at the Command Squadron (*Velitelská letka*) of the Air Force Command (*Velitelství letectva*) deployed at the Kbely air base. This undertaking was completed on 26 October 1955.[7]

On 12 December 1955, in accordance with Article 9 of the arms agreement from 12 September 1955, the Czechoslovak Ministry of Foreign Trade (*Ministerstvo zahraničního obchodu*) and Egyptian Ministry of War concluded Contract No. 155-B for the training of the Egyptian military personnel in Czechoslovakia during years 1955 and 1956 (the first two courses for Egyptian aviators were retroactively incorporated into this contract). Thus, from December 1955, the Czechoslovak People's Army carried out a series of short-term, introductory training sessions for the initial cadre of Egyptian armour, artillery, signal, and maintenance instructors (as listed in Table 2). Armoured, artillery, and signal officers were graduates of US and British military courses with the former having 5 to 10 years of experience. Technicians for repairs of armoured vehicles had roughly identical expertise. On average, aircraft mechanics had even 15 years of experience, of which five years were on jets. Up to the end of May 1956, 59 Egyptian officers went through Czechoslovak military training establishments.[8]

THE TESTING OF TRUCKS

The fourth shipment of weapons within the first Czechoslovak-Egyptian arms agreement from Czechoslovakia (planned to be handed over to Soviets at Čop railway station during 28 January and 5 February 1956) was accompanied by Tatra 805, Praga V3S, and Škoda 706 R trucks (each delivered in two examples) for military evaluations in Egypt. Egyptians even considered building the Tatra 805 and Praga V3S under licence in-country. Respective factory representatives, together with Captain Vladimír Holub from the Automotive and Tractor Directorate (*Automobilní a traktorová správa*) of the General Staff (*Generální štáb*), arrived in Cairo on 10 April 1956. They went immediately into the work and prepared the vehicles for military evaluation that began on 22 May in earnest and continued until 31 May. Thereafter, the Czechoslovak team carried out maintenance on the vehicles, which were subsequently handed over to business officials of the Czechoslovak embassy at Cairo and returned to Prague on 20 June 1956.

A 57mm vz. 43 anti-tank gun of Czechoslovak origin captured by the Israelis at the end of the Suez War in 1956. (Government Press Office)

A column of SD-100s seen during a parade in Cairo in 1957. (via Martin Smisek)

Contrary to Czechoslovak expectations, the trucks did not impress Egyptian military officials significantly and thus they were not introduced into the service of the Egyptian Army (except for the derived vz. 51 multiple rocket launchers and Škoda 706 RO buses). The tests showed that the Tatra 805 and Praga V3S would need more powerful engines and better oil cooling for regular operations of fully loaded vehicles in desert conditions. Moreover, the noise level in their driver cabs was considered too high. The wearing out of Barum tires on all vehicles was excessively high and the maximum speed of the Praga V3S was evaluated as quite low and recommended to be increased to at least 70 kilometres per hour (43 miles per hour).[10]

Testing of Praga V3S, Tatra 805, and Škoda 706 R trucks in Egypt of February 1956. (Československá armáda)

A V3S during evaluation. (Československá armáda)

FIRST CZECHOSLOVAK INSTRUCTORS IN EGYPT

As of November 1955, a total of nine Czechoslovak Air Force officers were deployed to Egypt to perform the handover of the first delivered aircraft, that were assembled there by Czechoslovak factory technicians, and to provide basic initial training of their Egyptian counterparts.[11]

A larger influx of Czechoslovak advisors and instructors took place only from late February 1956 with the arrival of 12 Czechoslovak Air Force officers. However, their selection proved to be generally poor. Most of them were very young – just 20 to 22 years old. Thus, their experience and knowledge were insufficient and pedagogical skills marginal. Reportedly, there were even instances of their indiscipline and tactless behaviour towards Egyptian officers. Moreover, the first Czechoslovak instructor teams sent almost no reports about their activities back to Czechoslovakia. Therefore, the General Staff in Prague had almost no information about the operation and the problems associated with the shipments of arms. The initial experience of Czechoslovak instructors indicated that hastily organised training courses for Egyptian officers in Czechoslovakia were not very effective due to their short duration and inadequate knowledge of the English language on the part of the trainees and Czechoslovak interpreters.

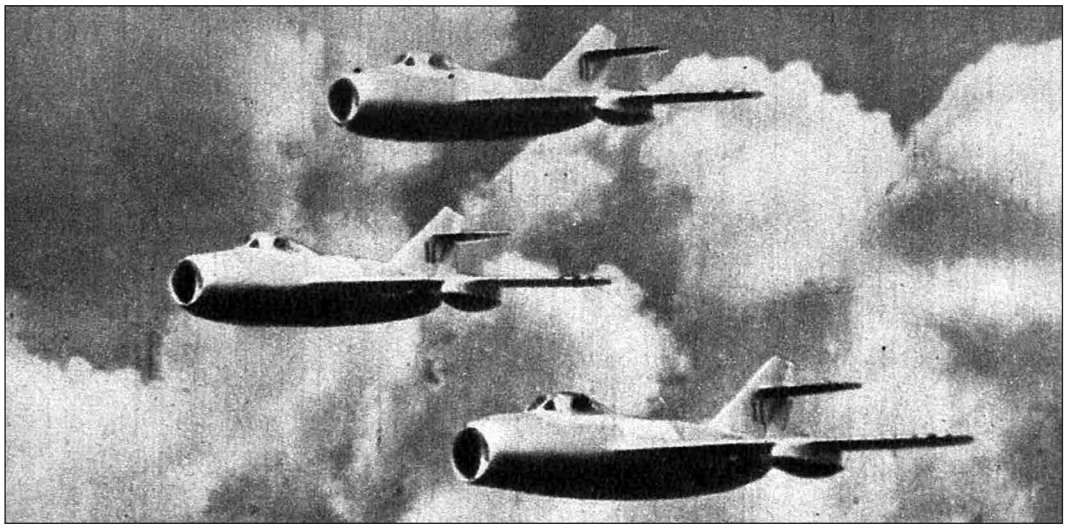
Some of the complications were discovered by the team of Major Jan Košta which functioned in Egypt between April and August 1956 as an advisory group for the correct storage of delivered tank and artillery materiel. The delivery documents were handed over to Egyptian officials late which caused incorrect sorting out and storage. Upon investigation and advice of Czechoslovak instructors, some materiel had to be re-stocked and transferred to different military warehouses. And on top of that, as of late June 1956, most of the Czechoslovak artillery armament could not be introduced into the regular service of the Egyptian Army since the Czechoslovak Ministry of Foreign Trade did not provide respective operator's manuals. The same was true for the catalogues of spare parts without which the correct spare components could not be ordered.[12]

Similar work, but for the Egyptian Air Force, was performed by Captain Kleimann and 1st Lieutenant Mik. They helped during the unpackaging and identification of spare parts for MiG-15bis fighters and MiG-15UTI combat trainers. Besides, Czechoslovak officers provided consultations regarding the correct storage of spare parts, organisation of warehouses, and their technical equipment. The activity of Czechoslovak Air Force officers was complicated by similar features as the work of Major Košta's group. Although many of the spare parts were delivered to Egypt in December 1955 and January 1956, Egyptians paid no attention to their proper storage. The components were left in original transport crates, some of which were badly damaged, under the open skies until the arrival of both Czechoslovak officers in April and May 1956 respectively. Moreover, some parts were packaged negligently by workers at Středočeské strojírny, the Czechoslovak licence manufacturer of MiG-15bis and MiG-15UTI aircraft. Furthermore, Captain Kleimann and 1st Lieutenant Mik witnessed that the passing of the required components from storage depots on combat units of the Egyptian Air Force was chaotic and too slow given the intensive flying activity.[13]

Under the leadership of Major Benda, tank instructors Vilém and Nimč accompanied by the interpreter Beneš (later replaced by Muzikář) carried out training of five Egyptian mechanics at the main military workshop in Cairo between 18 April and 5 August 1956. The purpose of the undertaking was to teach Egyptians disassembly, assembly, and troubleshooting of the V-2 engines installed in T-34/85 tanks and SD-100 self-propelled guns. The Egyptian Army provided nine power plants in a broken-down condition for the training, eight of which were duly repaired during the duration of the course, the remaining one was to be repaired without the supervision of Czechoslovak instructors after the end of the training. The failure of two V-2s was caused by the sloppy preparation of the vehicles for the transport from Czechoslovakia to Egypt – the cooling water froze inside the engines and caused their damage. The training was complicated by the lack of proper jigs, low cleanness in the workplace, and chaos in a local warehouse. The Egyptian trainees were generally evaluated by Czechoslovak instructors as competent repairmen interested in their work.[14]

As of May 1956, there were 25 Czechoslovak officers – instructors, 10 interpreters, and three factory representatives in Egypt. According

Probably taken at Abu Suweir, in late 1955, this is one of the earliest photographs of any kind of MiG in Egypt. It shows a MiG-15bis, with its cockpit covered by a tarpaulin, a slipper-type drop tank under the wing, and is in the process of being manhandled by the ground crew. (Dr David Nicolle Collection)



The 'silver' painted MiG-15s and their arrow-like wings enflamed the imagination of their pilots, ground crews, and the public in Egypt too. Unsurprisingly, retouched photographs of them were used for the creation of posters that motivated young Egyptians to join the air force. (Dr David Nicolle Collection)

to the reports of Czechoslovak advisors, up to the same period of time, one MiG-15 was destroyed and several of them were damaged because of pilot errors and flight indiscipline. Besides, some T-34/85 tanks were damaged due to the unskilled work of Egyptian crews and poor quality bearings installed in their sprocket wheels.[15]

ADDITIONAL ARMS DEALS FOLLOW

Meanwhile, discussions between Czechoslovak and Soviet officials on the one hand and the Egyptian representatives on the other, related to the additional massive arms shipments for Egypt's military were in full swing. The negotiations commenced in late 1955 but General Mohammed Hafez Ismail changed Egyptian requests several times, thus the final specification for the deal worth an overall value of a staggering 1.670 billion CSK was handed over only on 24 January 1956. However, this sum vastly exceeded Egyptian financial capabilities and had to be correspondingly brought down. On 31 January, the Soviet Ambassador in Czechoslovakia, Grishin, forwarded Moscow's approval with the prepared deal and the conditions of payment requested by Egyptians to Czechoslovak Prime Minister Viliam Široký.[16]

Hence, the next Czechoslovak-Egyptian arms agreement with the Soviet involvement hidden in the background would be signed on 10 April 1956. It had an overall value of 28.2 million GBP (569.5 million CSK) with the Czechoslovak participation worth 15.1 million GBP (303.9 million CSK). Again, the credit with an interest rate of 2 percent had to be provided. This time, however, the complete value of the agreement was to be paid only in goods during the years 1956 to 1960. The armament ordered in the agreement is listed in Table 3. The third arms agreement between Prague and Cairo worth 1.8 million GBP (36.1 million CSK) was awarded on 15 August 1956. Unlike previous cases, the Czechoslovak participation was formal only – all deliveries were realised by the Soviets. Payment conditions were identical to the preceding agreement.

During negotiations in October 1955, Egyptian Deputy Minister of War General Hassan Ragab Fahy had expressed interest in the acquisition of Czechoslovak manufacturing technology, together with proper technical documentation and licences, that could be used for the domestic production of rifles, light and heavy machine guns, mortars, gun barrels, machine gun and artillery ammunition, fuses, truck engines, and tractors. Just as in the case of arms deliveries, the Egyptian demands were disproportionate to Cairo's financial situation, as the report for the Politburo ÚV KSČ stated: '… it is evident that Egypt is carrying out large-scale industrial works construction that is not fully in harmony with its solvency.' The communists from Prague were ready to fulfil even these wishes and the corresponding agreement (without Soviet participation) for 3.1 million GBP (62 million CSK) was concluded on 29 October 1956. In it, Czechoslovakia established licence production of rifle (7.62mm), machine gun (12.7mm), cannon (23mm, 57mm, 85mm, and 100mm), and artillery (122mm) ammunition in Egypt together with the construction of two artillery shooting ranges and two apprentice schools for military plants.[17]

However, excessive arms demands strained the Egyptian treasury to such a degree that Cairo had to plead with Moscow for financial concessions during the autumn of 1956. Hence, on 27 October, the Soviet *Chargé d'Affaires* Budakov visited Czechoslovak Deputy Prime Minister Jaromír Dolanský and informed him about the request of the Egyptian government for a change of the payment condition of the agreements from 12 September 1955, 10 April

Table 3: Military hardware contracted within the frame of the Czechoslovak-Egyptian arms agreement from 10 April 1956[19]

Type	Number of examples	Note
binocular 6x30	4,000	delivery from Czechoslovakia
compass	6,000	delivery from the USSR
ZKM 451, 5.6mm rifle	1,000	delivery from Czechoslovakia
vz. 52, 7.62mm rifle	27,000	delivery from Czechoslovakia
vz. 52, 7.62mm light machine gun	1,320	delivery from Czechoslovakia
5.6mm round	5,000,000	delivery from Czechoslovakia
7.62mm round	90,000,000	delivery from the USSR and Czechoslovakia
7.62mm round with tracer	10,000,000	delivery from the USSR and Czechoslovakia
vz. 34 N, infantry rangefinder 0.7m	400	delivery from Czechoslovakia
sniper sight	1,000	
ROKS-3, flamethrower	400	delivery from Czechoslovakia
B-10, 82mm recoilless gun	650	delivery from the USSR
M1937 (ML-20), 152mm gun-howitzer	35	delivery from the USSR, Czechoslovak designation vz. 37 S
vz. 38/46, 12.7mm anti-aircraft machine gun	200	delivery from Czechoslovakia
vz. 53, 12.7mm quadruple anti-aircraft machine gun	20	delivery from Czechoslovakia
vz. 44, 85mm anti-aircraft gun	58	delivery from Czechoslovakia
vz. 51, 130mm multiple rocket launcher	12	delivery from Czechoslovakia
M-2, artillery tractor, upgraded	50	delivery from the USSR
12,7-PZ, 12.7mm armour-piercing incendiary round	2,000,000	delivery from Czechoslovakia
12,7-PZSv, 12.7mm armour-piercing incendiary round with tracer	1,000,000	delivery from Czechoslovakia
82mm round	50,000	for B-10, delivery from the USSR
82mm training round	10,000	for B-10, delivery from the USSR
85-JPSv-PLK 44, 85mm armour-piercing round	5,000	delivery from Czechoslovakia
85-JČ-PLK 44, 85mm time setting round	55,000	delivery from Czechoslovakia
122mm fragmentation round	14,000	for vz. 38 howitzer, delivery from the USSR
152mm fragmentation round	17,500	delivery from the USSR
152mm armour-piercing round	3,500	delivery from the USSR
130-JRRO-RM51, 130mm fragmentation rocket	36,100	delivery from Czechoslovakia
NRZ-1, identification system friend or foe	6	delivery from the USSR
SON-4, fire control radar	14	delivery from the USSR
PUAZO-4a, fire control director	14	delivery from Czechoslovakia
DJA-6, anti-aircraft rangefinder	14	delivery from the USSR
T-34/85, medium tank	15	delivery from Czechoslovakia
SD-100, self-propelled gun	75	delivery from Czechoslovakia
armoured recovery vehicle, upgraded	24	delivery from the USSR
SPK-5, armoured crane vehicle	5	delivery from the USSR
BTR-152, armoured personnel carrier	100	delivery from the USSR
85mm armour-piercing discarding sabot round	10,000	for T-34/85, delivery from the USSR
100mm fragmentation round	37,500	for SD-100, delivery from Czechoslovakia
100mm armour-piercing round	15,000	for SD-100, delivery from the USSR
smoke canister for T-34/85	2,000	
Il-14P, transport aircraft	5	delivery from the USSR
B-32, 12.7mm armour-piercing incendiary round	150,000	for aircraft machine gun, delivery from the USSR

Table 3: Military hardware contracted within the frame of the Czechoslovak-Egyptian arms agreement from 10 April 1956[19] (*continued*)		
BZT, 12.7mm armour-piercing incendiary round with tracer	350,000	for aircraft machine gun, delivery from the USSR
OZT, 23mm high explosive incendiary round with tracer	750,000	for NR-23 aircraft cannon, delivery from Czechoslovakia
BZT, 23mm armour-piercing incendiary round with tracer	750,000	for NR-23 aircraft cannon, delivery from Czechoslovakia
OZT, 37mm high explosive incendiary round with tracer	150,000	for N-37 aircraft cannon, delivery from Czechoslovakia
BZT, 37mm armour-piercing incendiary round with tracer	150,000	for N-37 aircraft cannon, delivery from Czechoslovakia
FAB-3000, high explosive bomb	90	delivery from the USSR
FAB-1500, high explosive bomb	135	delivery from the USSR
FAB-500, high explosive bomb	1,800	delivery from the USSR
FAB-250, high explosive bomb	3,600	delivery from the USSR
ZAB-250-130V, incendiary bomb	300	delivery from the USSR
OFAB-100, high explosive fragmentation bomb	2,000	delivery from Czechoslovakia
AO-50-100, fragmentation bomb	1,500	delivery from the USSR
AO-10, fragmentation bomblet	8,640	delivery from the USSR
AO-2,5SCh, fragmentation bomblet	30,240	delivery from the USSR
P-50, practise bomb	1,000	delivery from the USSR
RBK-250, cluster bomb for AO-10 and AO-2,5 bomblets	1,800	delivery from the USSR
BT-3-49, bomb loader	2	delivery from the USSR
BT-3-44, bomb loader	4	delivery from the USSR
PLK-45, pilot emergency parachute	20	delivery from Czechoslovakia
PDK-42, cargo parachute	500	delivery from Czechoslovakia
flight suit	300	delivery from Czechoslovakia
equipment for medical examination of pilots	2	delivery from the USSR
PBK-50, hyperbaric chamber	1	delivery from the USSR
PKV-45, radio direction-finder	3	ground support equipment for delivered aircraft, delivery from the USSR
JAWA 350, motorcycle	250	delivery from Czechoslovakia
Škoda 706 RO, bus	50	delivery from Czechoslovakia
GAZ-63, light truck	500	delivery from the USSR
ZiS-150, medium truck	50	delivery from the USSR
ZiS-151, medium truck	1,000	delivery from the USSR
PAZ-653, ambulance	100	delivery from the USSR
BZ-16, fuel tank vehicle	10	(incorrect designation for TZ-16?) delivery from the USSR
PMG-20, firefighting vehicle	5	delivery from the USSR
PMG-21, firefighting vehicle	5	delivery from the USSR
PMZ-18, firefighting vehicle	5	delivery from the USSR
PMG-6, firefighting vehicle	10	delivery from the USSR
KRAS-3, mobile radar workshop	20	delivery from the USSR
TRB-B-49, mobile tank workshop	30	delivery from the USSR
TRMA-49, mobile tank workshop	10	delivery from the USSR
EGSM, mobile welding workshop	24	delivery from the USSR
KMM, mobile blacksmith's workshop	15	delivery from the USSR
AZS-4, accumulator charging station	17	ground support equipment for delivered aircraft, delivery from the USSR
PZS-4B, charging station	110	delivery from the USSR
AES-1, power generating set	6	delivery from the USSR

Table 3: Military hardware contracted within the frame of the Czechoslovak-Egyptian arms agreement from 10 April 1956[19] (*continued*)		
APA-2, aircraft start unit	9	ground support equipment for delivered aircraft, delivery from the USSR
mobile power generating set 25 kW	15	delivery from the USSR
AKS-8, compressor	9	ground support equipment for delivered aircraft, delivery from the USSR
AK-12m, oxygen station	2	ground support equipment for delivered aircraft, delivery from the USSR
AKZS-40, mobile oxygen-filling station	12	ground support equipment for delivered aircraft, delivery from the USSR
MZ-150, oil filling station	2	delivery from the USSR
MZ-51m, oil filling station	6	delivery from the USSR
PARM-2, mobile aircraft workshop	2	ground support equipment for delivered aircraft, delivery from the USSR
PAF-3, mobile photo laboratory	4	ground support equipment for delivered aircraft, delivery from the USSR
RSK-1A, mobile radio station	10	ground support equipment for delivered aircraft, delivery from the USSR
ARP-5, mobile radio direction-finder	6	ground support equipment for delivered aircraft, delivery from the USSR
K-1, trailer	300	delivery from Czechoslovakia
A-5, trailer	30	delivery from Czechoslovakia
Zetor 25	20	ground support equipment for delivered aircraft, delivery from Czechoslovakia
forklift (3 tonnes)	15	delivery from the USSR
forklift (5 tonnes)	10	delivery from the USSR
AP-1522, electric cart	20	delivery from Czechoslovakia
AV-1522, forklift	10	delivery from Czechoslovakia
RSB-F3, radio station	10	ground support equipment for delivered aircraft, delivery from the USSR
RPN, radio station	30	delivery from the USSR
TP-25, field telephone	3,000	delivery from Czechoslovakia
PK-40, field telephone exchange	65	delivery from the USSR
TÚ-11, field telephone exchange	435	delivery from Czechoslovakia
dry cell battery for field telephone	6,000	delivery from Czechoslovakia
PT-Mi Ba, Bakelite anti-tank mine	100,000	delivery from Czechoslovakia
PP-Mi Sk, anti-personnel shrapnel mine	12,500	delivery from Czechoslovakia
PP-Mi Šr, anti-personnel shrapnel mine	12,500	delivery from Czechoslovakia
PN-4, explosive block	1,000	delivery from Czechoslovakia
TM-2, fuse	100	
TM-3, fuse		
RK-1, capacitor exploder	50	delivery from Czechoslovakia
TN, linear charge (1.5 meters)	750	delivery from Czechoslovakia
mine detector	up to 800	delivery from Czechoslovakia
assault boat	15	delivery from Czechoslovakia
Maska V 9x9, camouflage net	100	delivery from Czechoslovakia
Maska T 12x12, camouflage net	100	delivery from Czechoslovakia
Maska DD 9x13.5, camouflage net	100	delivery from Czechoslovakia
Maska DA 18x18, camouflage net	50	delivery from Czechoslovakia
barbed wire	400 tonnes	delivery from Czechoslovakia

Table 3: Military hardware contracted within the frame of the Czechoslovak-Egyptian arms agreement from 10 April 1956[19] (*continued*)		
ZIF-1200, core drill	2	delivery from the USSR
pickaxe	10,000	delivery from Czechoslovakia
engineer shovel	18,000	delivery from Czechoslovakia
field shovel	35,000	delivery from Czechoslovakia
PK-26, mobile field kitchen	200	delivery from Czechoslovakia
small submarine	1	delivery from the USSR
45mm armour-piercing round	150	delivery from the USSR
45mm high explosive round	600	delivery from the USSR
45mm fragmentation round	2,250	delivery from the USSR
45mm training round	1,000	delivery from the USSR
53-38, torpedo	20	delivery from the USSR
AGSB, deep-sea mine	500	delivery from the USSR
spare parts, tools for maintenance and repairs, teaching aids		spare parts for three years of operation, delivery from the USSR and Czechoslovakia in 1956 and 1957

1956, and 15 August 1956. The Czechoslovak Ministry of Foreign Trade considered the Egyptian proposal as 'unbearable for the Czechoslovak national economy'. The Czechoslovak delegation was promptly dispatched to Moscow in order to discuss the details and find some functioning solution. During negotiations lasting from 29 October to 3 November, Soviet officials decided to accept both Czechoslovak objections and Egyptian wishes. Thus, the part of the instalments that Egypt had to pay for the delivered armament was rescheduled for 1961 to 1966, basically according to Cairo's request. As compensation for delayed instalments during the years 1957 to 1960, the Soviets promised to deliver to Czechoslovakia an additional 100,000 tonnes of grain that Prague would have to otherwise buy in the West for hard currency. Moscow had to make some financial adjustments in the case of the Polish-Egyptian arms deals as well – in 1955 and 1956 Cairo ordered military materiel to the overall value of some 90 million GBP in Czechoslovakia (and thereby in the Soviet Union) and Poland. The total Czechoslovak financial share in these deals was approximately 40 percent.[18]

AIR DEFENCE TRAINING UNDER THE WAR CLOUDS

On 11 July 1956, a group of Czechoslovak instructors for anti-aircraft guns and related equipment delivered under the second Czechoslovak-Egyptian arms agreement arrived in Cairo. The team was led by Captain Bohumil Kadeřábek (instructor for vz. 44 anti-aircraft gun) and composed of Captain Josef Petr (instructor for PUAZO-4a fire control director), Captain Jaroslav Ouředník (instructor for SON-4 fire control radar) and three interpreters (Zahradník, Majer, and Kreisinger). During 15 and 16 July, the Czechoslovak officers discussed the organisation of the forthcoming training with the Egyptian representatives. Following these meetings, respective training programs were prepared by Czechoslovak instructors who, at the same time, helped with the sorting out of the air defence materiel in a local military depot and its preparation for the transport to Alexandria. Czechoslovak officers and interpreters moved themselves to this city on 25 July. There, they were informed by the commander of a local air defence training school that the Egyptians did not have enough officers for the Czechoslovak course. Thus, the start of the training, originally planned to begin on 28 July, had to be postponed.

Table 4: Czechoslovak military advisors and instructors in Egypt, February 1956 – November 1956[21]				
Rank and name	**Higher command**	**Date of arrival**	**Date of departure**	**Note**
1st Lieutenant Bohumil Polák	Air Force Command	28 February 1956	23 May 1956	
1st Lieutenant Jiří Balouš	Air Force Command	28 February 1956	23 May 1956	
1st Lieutenant Josef Horecký	Air Force Command	13 March 1956	1 August 1956	
Captain Vladimír Pospíšil	Air Force Command	28 February 1956	23 May 1956	
Captain Karel Cvačka	Air Force Command	28 February 1956	18 July 1956	
2nd Lieutenant Miloslav Pešek	Air Force Command	28 February 1956	23 May 1956	
2nd Lieutenant Jaroslav Koudelka	Air Force Command	28 February 1956	27 June 1956	
2nd Lieutenant František Honzík	Air Force Command	28 February 1956	23 May 1956	
2nd Lieutenant Zdeněk Vorofka	Air Force Command	28 February 1956	1 September 1956	

Table 4: Czechoslovak military advisors and instructors in Egypt, February 1956 – November 1956[21] (*continued*)				
Captain Ladislav Šuráň	Air Force Command	28 February 1956	23 May 1956	
2nd Lieutenant Miroslav Divíšek	Air Force Command	28 February 1956	27 June 1956	
1st Lieutenant Miloš Posád	Air Force Command	28 February 1956	23 May 1956	
2nd Lieutenant Ludvík Satora	Air Force Command	28 February 1956	1 September 1956	
Captain Josef Šneidr	Tank and Mechanized Troops Command	13 March 1956	13 July 1956	tank advisory team?
1st Lieutenant Jaroslav Zezhulčík	Tank and Mechanized Troops Command	13 March 1956	4 July 1956	tank advisory team?
Captain Jaroslav Nekola	Tank and Mechanized Troops Command	13 March 1956	4 July 1956	tank advisory team?
1st Lieutenant Stanislav Žouželka	Tank and Mechanized Troops Command	13 March 1956	20 June 1956	tank advisory team?
Captain Václav Moravec	Tank and Mechanized Troops Command	13 March 1956	4 July 1956	tank advisory team?
Major Zdeněk Benda	Tank and Mechanized Troops Command	13 March 1956	10 August 1956	commander, tank advisory team
Major Jan Košta	Artillery Command	10 April 1956	27 August 1956	instructor for the storage of artillery materiel
Captain Milan Vocel	Artillery Command	10 April 1956	18 August 1956	instructor for the storage artillery materiel
Captain Jaroslav Liška	Tank and Mechanized Troops Command	10 April 1956	27 August 1956	instructor for the storage of tank materiel
Captain Ignác Kleimann	Air Force Command	15 May 1956	9 September 1956	instructor for the storage of aircraft and related equipment
1st Lieutenant Bohumil Mik	Air Force Command	10 April 1956	10 August 1956	instructor for the storage of aircraft and related equipment
Captain Jiří Heller	Air Force Command	20 March 1956	11 November 1956	doctor, aviation advisory group
Captain Bohumil Kadeřábek	State Air Defence Command	10 July 1956	20 November 1956	instructor for vz. 44 anti-aircraft gun
Captain Josef Petr	State Air Defence Command	10 July 1956	17 November 1956	instructor for PUAZO-4a fire control director
Captain Jaroslav Ouředník	State Air Defence Command	10 July 1956	17 November 1956	instructor for SON-4 fire control radar
Major Marian Lněnička	Air Force Command	3 July 1956	21 September 1956	replacement for 2nd Lieutenant Divíšek
Major General Jan Reindl	Air Force Command	10 July 1956	16 December 1956	commander, aviation advisory group
Lieutenant Colonel Ľudovít Solár	Air Force Command	10 July 1956	18 October 1956	deputy commander and instructor pilot, aviation advisory group
Major Jiří Plzák	Air Force Command	10 July 1956	16 December 1956	instructor pilot (navigation officer), aviation advisory group
Major Jaroslav Šebek	Air Force Command	10 July 1956	18 October 1956	technical instructor, aviation advisory group
Captain Egon Skála	Air Force Command	10 July 1956	16 December 1956	instructor pilot (gunnery officer), aviation advisory group
Major Josef Meduna	Air Force Command	11 July 1956	18 November 1956	instructor pilot, aviation advisory group for the Syrian Arab Air Force
Captain Josef Saksún	Air Force Command	11 July 1956	perished on 16 August 1956	instructor pilot, aviation advisory group for the Syrian Arab Air Force

Table 4: Czechoslovak military advisors and instructors in Egypt, February 1956 – November 1956[21] (*continued*)				
1st Lieutenant Pavel Hladil	Air Force Command	11 July 1956	18 November 1956	instructor pilot, aviation advisory group for the Syrian Arab Air Force
1st Lieutenant Josef Drmota	Air Force Command	11 July 1956	18 November 1956	aircraft technician, aviation advisory group for the Syrian Arab Air Force
1st Lieutenant Jaroslav Čech	Air Force Command	11 July 1956	18 November 1956	electrical equipment technician, aviation advisory group for the Syrian Arab Air Force
2nd Lieutenant Václav Břečka	Air Force Command	10 July 1956	18 November 1956	aircraft technician, aviation advisory group for the Syrian Arab Air Force
2nd Lieutenant Josef Macek	Air Force Command	10 July 1956	18 November 1956	radio equipment technician, aviation advisory group for the Syrian Arab Air Force
2nd Lieutenant Josef Šus	Air Force Command	10 July 1956	18 November 1956	weapons technician, aviation advisory group for the Syrian Arab Air Force
Captain Antonín Procházka	Air Force Command	17 July 1956	15 August 1956	
Major Ludvík Suza	Air Force Command	10 July 1956	30 September 1956	
Lieutenant Colonel Vladimír Conk	Military Design Institute	17 July 1956	15 August 1956	airfield survey group
Jiří Moisejenko	Military Design Institute	21 July 1956	15 August 1956	airfield survey group
Karel Kučera	Military Design Institute	17 July 1956	15 August 1956	airfield survey group
Major Vladimír Hromádko	Tank and Mechanized Troops Command	2 July 1956	29 August 1956	
Captain Ludvík Stojan	Artillery Command	2 July 1956	29 August 1956	
Václav Janák	Repair Plant Kbely	2 July 1956	29 August 1956	
František Janda	Repair Plant Kbely	2 July 1956	29 August 1956	
Josef Zborník	Repair Plant Malešice	2 July 1956	29 August 1956	
Captain Stanislav Belo	Artillery Command	17 July 1956	15 August 1956	
1st Lieutenant Jiří Kunc	Air Force Command	28 August 1956	30 September 1956	instructor pilot, replacement for Captain Saksún, aviation advisory group for the Syrian Arab Air Force
Václav Kubka	Air Force Command	25 September 1956		
Václav Gubiš		25 September 1956		replacement for interpreter Brdičko
Prof Alois Farlík	Antonín Zápotocký Military Technical Academy	7 August 1956	18 August 1956	
		2 October 1956	19 November 1956	
Captain Vlastimil Maňousek	Antonín Zápotocký Military Technical Academy	2 October 1956	19 November 1956	
Major Milan Vokurka	General Staff	2 October 1956	19 November 1956	
Viktor Kanický	Antonín Zápotocký Military Technical Academy	2 October 1956	19 November 1956	
Warrant Officer Josef Doulík	Air Force Command	1 September 1956	18 November 1956	cook, aviation advisory group for the Syrian Arab Air Force
Captain Vladimír Nechanický	Air Force Command	16 October 1956	16 December 1956	replacement for Major Šebek, aviation advisory group
Captain Marian Vlasák	Air Force Command	16 October 1956	March 1957	doctor
Captain Ludvík Olšovský	Air Force Command	9 September 1956	25 October 1956	
1st Lieutenant Vojtěch Poledník	Artillery Command	16 October 1956	18 November 1956	

Instead, Czechoslovak officers were invited to familiarise themselves with the current anti-aircraft armament of the Egyptian Army. This duly took place between 27 July and 5 August. Meanwhile, Egyptian officers trained at the Antonín Zápotocký Military Technical Academy (*Vojenská technická akademie Antonína Zápotockého,* VTA AZ) in Brno returned back home. Thus, it was decided that Kadeřábek's group would continue in their training. However, this proposal was very short-lived due to Nasser's decision to nationalise the Suez Canal and the subsequent rise of international tension. The Suez Canal Company, the shares of which were mostly held by British and French investors, was nationalised on 26 July 1956. Nasser justified his step with the need to finance the construction of the Aswan Dam. The nationalisation of the Suez Canal was an unpleasant surprise for Great Britain and France and was perceived by both countries as a direct threat to their economic interests, particularly oil supplies. Great Britain began to consider various options, including military intervention. France and Israel joined the British planning which in turn led to the 1956 Suez War.

Hence, the Egyptian officials decided definitively that swift training of 36 officers in the combat deployment of vz. 44 anti-aircraft guns during a 15-days long course was needed. Thus, Captain Kadeřábek, assisted by Captain Petr, trained 36 officers and an additional six non-commissioned officers in the operation of the guns using the direct aiming method and aiming with the PUAZO-4a fire control director. Despite repeated urgings of Captain Kadeřábek, their work was complicated by the fact that some critical equipment for the proper operation of the guns was still missing. Therefore, no live firing exercise could be carried out at least until the middle of August. On the contrary, crews of the M1939 anti-aircraft guns trained in live shooting on a daily basis from the beginning of the same month. Besides, the most critical situation reigned in the case of SON-4 fire control radars – no radar had been delivered so far (i.e. as of the middle of August 1956), thus Captain Ouředník could only provide theoretic instruction to four Egyptian officers, three of whom were graduates of the training in Czechoslovakia. Captain Petr was able to train three Egyptian officers, who already had some rudimentary training from Brno, in the operation of the PUAZO-4a.[20]

AIRFIELD SURVEY

In early June 1956, the Egyptian military delegation arrived in Prague and, among others, requested assistance in the building and reconstruction of military air bases. According to Egyptian demands, Czechoslovak experts were to evaluate the current condition of Egyptian air bases and work out a proposal for their improvement, mostly concerning the needs generated by the acquisition of MiG-15bis fighters and Il-28 bombers. 'It was clear from the talks that the Egyptian side was trying to eliminate dependence on Italy, France, and England in building airfields, but it also did not want Egypt to get into a new dependence on Czechoslovakia.'[22]

Accordingly, the Military Design Institute *(Vojenský projektový ústav*) dispatched three experts to Egypt in mid-July 1956. The schedule was very tight since the original plan counted upon the assessment of only four or five air bases but, in the end, the Egyptians demanded an evaluation of 11 airfields. Thus, Lieutenant Colonel Vladimír Conk, Jiří Moisejenko, and Karel Kučera visited Cairo West, Abu Suweir, Kabrit, Almaza, Hamma, Deversoir, Helwan, Dikhelia, Nouzka, Fayid, and Kasfareet. The final report with a thorough assessment and recommendations was prepared for the first six air bases mentioned, the reconstruction of which was planned to begin in 1956. Due to the limited amount of time, only an informational report was written in the case of the remaining airfields. The Czechoslovak experts returned home on 15 August.[23]

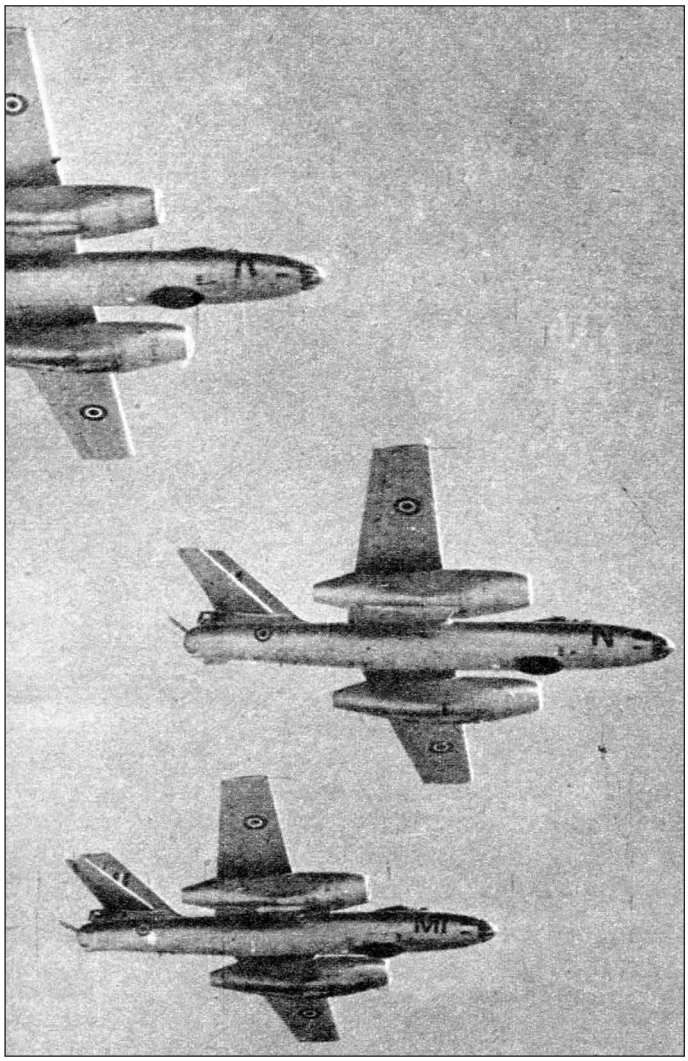
Major General Jan Reindl. (VÚA-SA AČR Olomouc via Milan Vyhlídal)

AVIATION ADVISORY GROUP OF GENERAL REINDL

During the summer of 1956, the nationalisation of the Suez Canal was not the only source of tensions in the Middle East since, in late 1954, Nasser began a policy of sponsoring raids into Israel by the fedayeen. These attacks regularly triggered a series of Israeli reprisal operations. One of the consequences for the Egyptian Air Force was to get newly delivered jet combat aircraft into combat-ready status as fast as possible (as of 27 December 1955, 40 MiG-15bis fighters and 24 Il-28 bombers were assembled by Czechoslovak and Soviet mechanics). Thus, in a dispatch to Prague from 10 April 1956, Czechoslovak Ambassador in Egypt Karpíšek reported that 'six Egyptian [Il-28] bombers are ready for action. Two of them overflew and photographed Haifa during the night on the 10th [April]. MiG fighters are in constant readiness. […] Egyptian Ministry of War requests accelerated training of airmen, [and] tank crews by Czechoslovak instructors here'.[24]

This request paved the way for the arrival of the most prominent amongst the various Czechoslovak training teams – the aviation advisory group. Under the leadership of Major General Jan Reindl (former Deputy Commander of the Czechoslovak Air Force), its task was to provide tactical and combat training for two Egyptian fighter squadrons, i.e. to teach their pilots how to fight with MiG-15bis fighters in an element (2 aircraft), a flight (4 aircraft) and a squadron (12 aircraft) within visual flight rules conditions including air-to-air and air-to-ground gunnery training, air combat manoeuvring, bombardment, bomber escort, and aerial combat against enemy fighter and bomber aircraft. The dispatch of the group was recommended by the top-level Soviet military advisors attached at that time to the Ministry of National Defence (*Ministerstvo národní obrany*) and the General Staff (*Generální štáb*) in Prague. One document signed by the commander of the Czechoslovak Air Force Major General Jaroslav Týkal stated that the concept of this training mission 'ensures that the given task is going to be accomplished, but it is chosen with the respect to the fact that this is not a training of an allied air force'.[25]

The advisory group, composed of the commander, four instructors, and two interpreters (later supplemented by a doctor),



A trio of Egyptian Il-28s overflying Cairo during the parade commemorating the 23 July Revolution, on 23 July 1956. By the time, the first two units flying them – Nos. 8 and 9 Squadrons – were already considered operational by their Czechoslovak advisors. Notably, aircraft wore none of the typical serials, just single letters of the Latin alphabet. Seen here are examples 'K', 'N', and 'M1'. (David Nicolle Collection)

arrived in Cairo on 10 July 1956. During the next day, Reindl's team was augmented by a subgroup of Major Josef Meduna that was tasked to train Syrian pilots and ground crews on MiG-15bis fighters. Since there was no air base completely suitable for the regular operation of MiG-15s in Syria at that time, the training of the Syrian Arab Air Force personnel took place in Egypt.

On 13 July, Major General Reindl, together with Czechoslovak Military Attaché Colonel Jaroslav Knébl and Business Attaché Háva, discussed the details of the forthcoming undertaking with Chief of the Staff of the Egyptian Air Force, Air Marshal Muhammad Sidki Mahmoud. The Egyptian officer proposed to use Abu Suweir air base, a former Royal Air Force (RAF) station recently vacated by the British, as a location for the actual training. Both Reindl and Knébl objected to this conclusion because, according to the previous agreements, Abu Suweir could still be used by RAF aircraft and had a small complement of British personnel which had the potential to jeopardise the secrecy of the training and security of Czechoslovak instructors. However, Air Marshal Mahmoud insisted on his decision.

During the Islamic holidays, Major General Reindl toured Abu Suweir in person and found out that two Egyptian Air Force squadrons were already deployed there, ready to commence training. Reindl and Knébl visited Soviet Military Attaché Nemchenko and asked him for the support of Reindl's request – to stage the training at a different air base. The actual training was to begin at Abu Suweir with the pilots of No. 30 Squadron on 25 July. However, due to the completely unsuitable dinner and breakfast of Egyptian and Czechoslovak pilots, Major General Reindl prohibited any flight activity of his instructors. He complained to the Egyptian liaison officer about this failure and the terrible accommodation that was provided for his group and threatened that, under such conditions, the Czechoslovak team would provide no assistance for the Egyptian Air Force.

Upon this threat, the diet and the accommodation improved almost immediately to a high standard. On the next day, the required number of aircraft was not available due to technical reasons. Hence, only Czechoslovak instructor pilots went into the air to familiarise themselves with the area around Abu Suweir. The same day, Nasser declared the nationalisation of the Suez Canal. This step destroyed the Czechoslovak training program completely since, from that time, both squadrons stood alert almost permanently.

Following this development, the Egyptians finally concluded that training on the air base with a British presence was not suitable. Hence, Air Vice Marshal Hashad took Major General Reindl and showed him three other air bases that could be used for training. The Czechoslovak commander selected Kabrit where the No. 1 Squadron was subsequently moved, while No. 30 remained in combat readiness in Abu Suweir.

Moreover, Major General Reindl was asked by Egyptian Air Force leadership to assess the existing air defence system since even Air Marshal Muhammad Sidki Mahmoud had strong doubts about its true combat effectiveness. Reindl accepted the request and during his inspection of Egyptian military facilities, he witnessed that the Egyptians had completely taken over the British air defence system following their departure from Egypt. At that time, there were only two ESV2 early warning radars of French origin, deployed to the west and to the east of Port Said, with a mutual distance of ca 100–120 kilometres (62–75 miles). Another four radars (three of the same French type and one from Great Britain) were deployed in the interior for ground-controlled interception. This radar network was complemented by former British visual observation posts along Egypt's north coast and along the Suez Canal. These two lines were augmented by a line of posts erected by the Egyptians along the border with Israel. The Egyptian air defence system was recently complemented by two Soviet-made P-8 radars, the crews of which were trained by Soviet instructors. However, the post of one P-8 was situated in the desert in such an inappropriate way that Egyptian operators complained that the radar could not detect targets more than 60 kilometres away and at an altitude lower than 1,000 meters (3,281 feet). The other P-8 was deployed close to the Israeli border. However, due to its poor performance, the Egyptians did not count on its integration into the air defence radar network.

Although local newspapers, radio broadcasting, and even the Egyptian Air Force's top leadership were claiming that war was imminent and that the British and French forces could be defeated easily, Major General Reindl could witness that absolutely no serious preparations for the conflict were taking place. In his report from 11 August, he wrote: 'It was clear to me that if there would be an armed conflict, the totally unprepared Egyptian Air Force would be completely smashed at its airfields, the air defence, the posts of which are well known to the Englishmen, would be completely eliminated in the first attack.'

Therefore, Reindl wasted no time and, on 7 August, sent a letter to Air Marshal Muhammad Sidki Mahmoud with a set of

recommendations for the immediate improvement of the Egyptian Air Force combat readiness. Within a couple of hours, Major General Reindl received the answer in which Air Marshal Mahmoud expressed complete agreement with his proposals. The next day, the Chief of the Staff of the Egyptian Air Force with his 15 top-ranking officers arrived at Kabrit to discuss proposed improvements personally with Reindl in more detail. This negotiation had far-reaching consequences, as Major General Reindl noted: 'From this moment on, there is visible a great effort at the airfields to be prepared in all ways for a possible conflict. The work is undertaken under combat conditions.' [26]

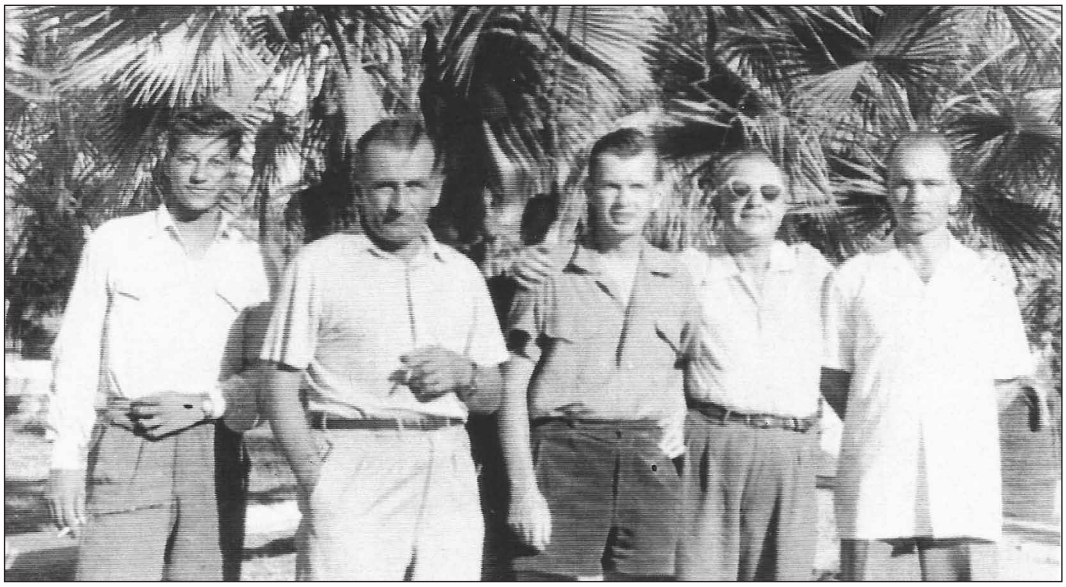
INTERNAL DISPUTES

Due to the heightened tensions, the Egyptians accepted Reindl's unrealistic offer and thus hard-working Czechoslovak instructors performed simultaneously for some 12 days, training at both air bases – Kabrit (No. 1 Squadron) and Abu Suweir (No. 30 Squadron) – until 28 August. Pilots of both squadrons were taught the basics of air combat under daylight conditions in elements, and partially in flights, at medium and high altitudes. Air-to-ground gunnery training in elements and flights was performed at the same time. From 29 August, the Czechoslovak advisors concentrated on the tactical training of No. 1 Squadron only, mostly because the low number of Czechoslovak instructors were stretched to the limits. Subsequently, the commander of Abu Suweir air base complained to Reindl why he promised something he was unable to fulfil. Reindl's instructors also carried out theoretical instruction, thus completing 19 lectures in the duration of 38 teaching hours. At both squadrons, the advisory team firmly implemented Czechoslovak standards of the pre-flight briefing, the post-flight debrief, and the organisation of flight operations in the air base. The Czechoslovak advisory team completed the training of the No. 1 Squadron on 27 September 1956. Beginning on 1 October, 10 pilots of the unit commenced the conversion training on MiG-17F fighters under the guidance of Soviet instructors.[27]

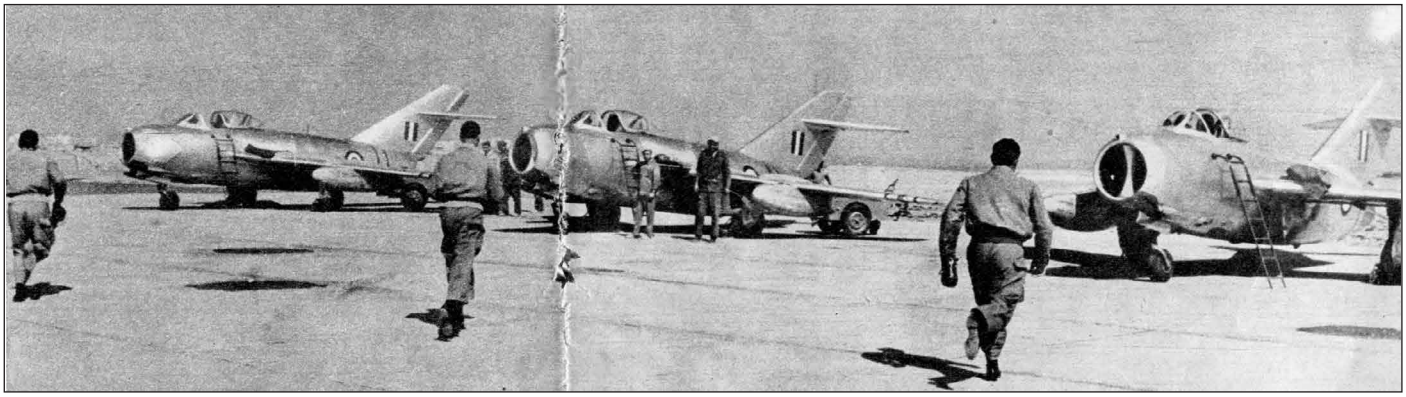
However, not all things were running smoothly for the Czechoslovak military teams deployed in Egypt. On 16 August 1956, instructor pilot Captain Josef Saksún from the subgroup responsible for the training of the Syrian Arab Air Force personnel perished in the crash of MiG-15UTI near Dikhelia air base. Just one day later, Czechoslovak civilian interpreter Jan Brdičko attached to the artillery advisory group died due to severe heatstroke he sustained at the Almaza artillery firing range during 12 and 13 August. Despite the greatest effort of the Czechoslovak military doctor Captain Jiří Heller and the best Egyptian physicians specifically summoned to his medical treatment, Jan Brdičko succumbed to his illness at the military hospital at Almaza on 17 August.[28]

Although the leadership of the Egyptian Air Force highly appreciated the work of Reindl's team, the situation in the aviation advisory group was almost from the beginning plagued by internal rifts between Major General Reindl and his deputy Lieutenant Colonel Ľudovít Solár together with Major Jaroslav Šebek. This was primarily caused by the poor selection of the personnel involved. Major General Reindl had insufficient leadership qualities and no knowledge of pilot training. Moreover, due to his already poor health, he had absolutely no practical experience in flying jet aircraft. Most of the instructors were selected from staff officers of the Air Force Command 'who had long forgotten what the job of a squadron looks like'.

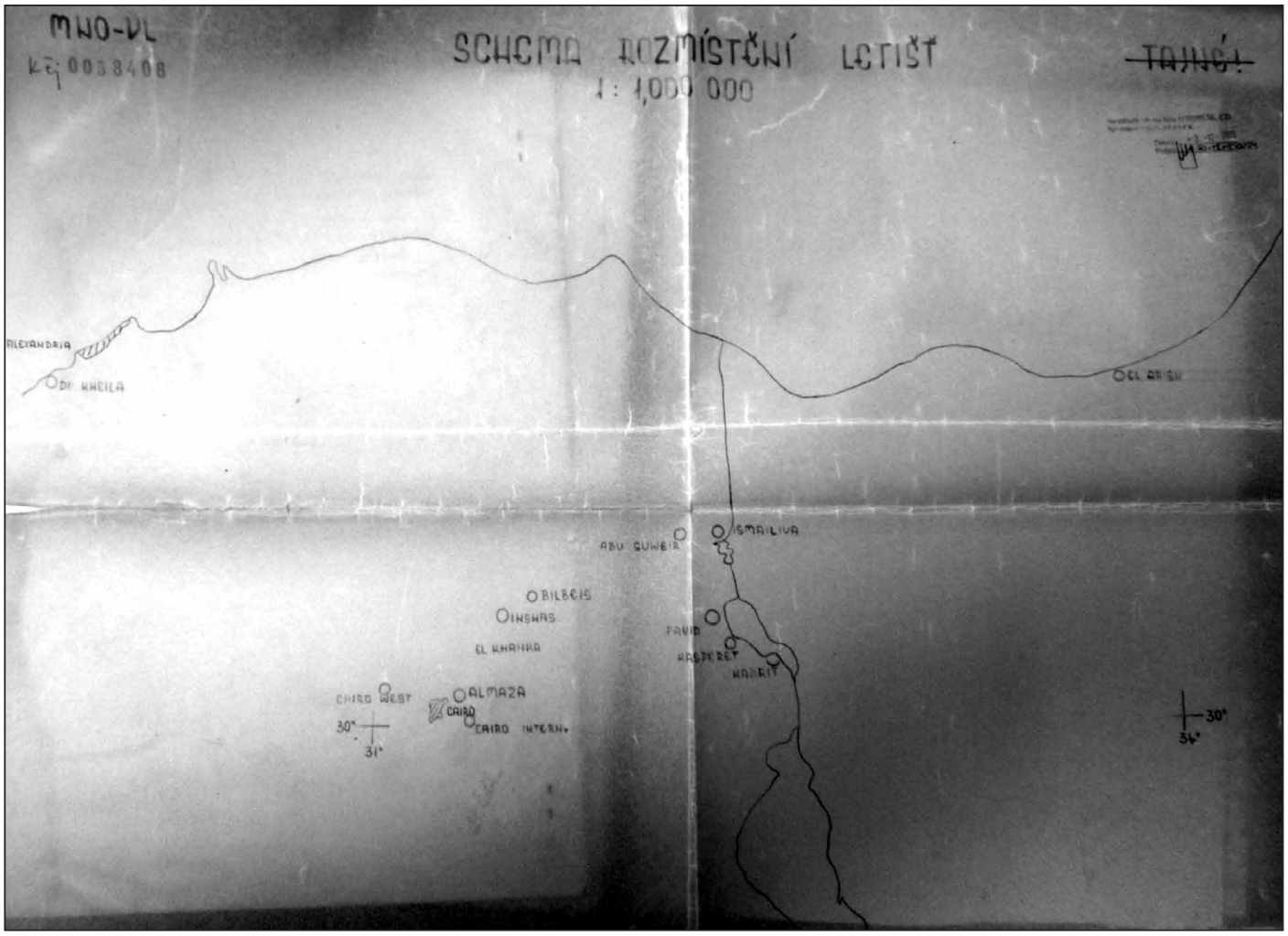
Poor communication played some role too since before the departure to Egypt, Lieutenant Colonel Solár was informed that the main objective of the mission was to train Egyptian Air Force officers in organising and conducting flight training so that the Egyptian



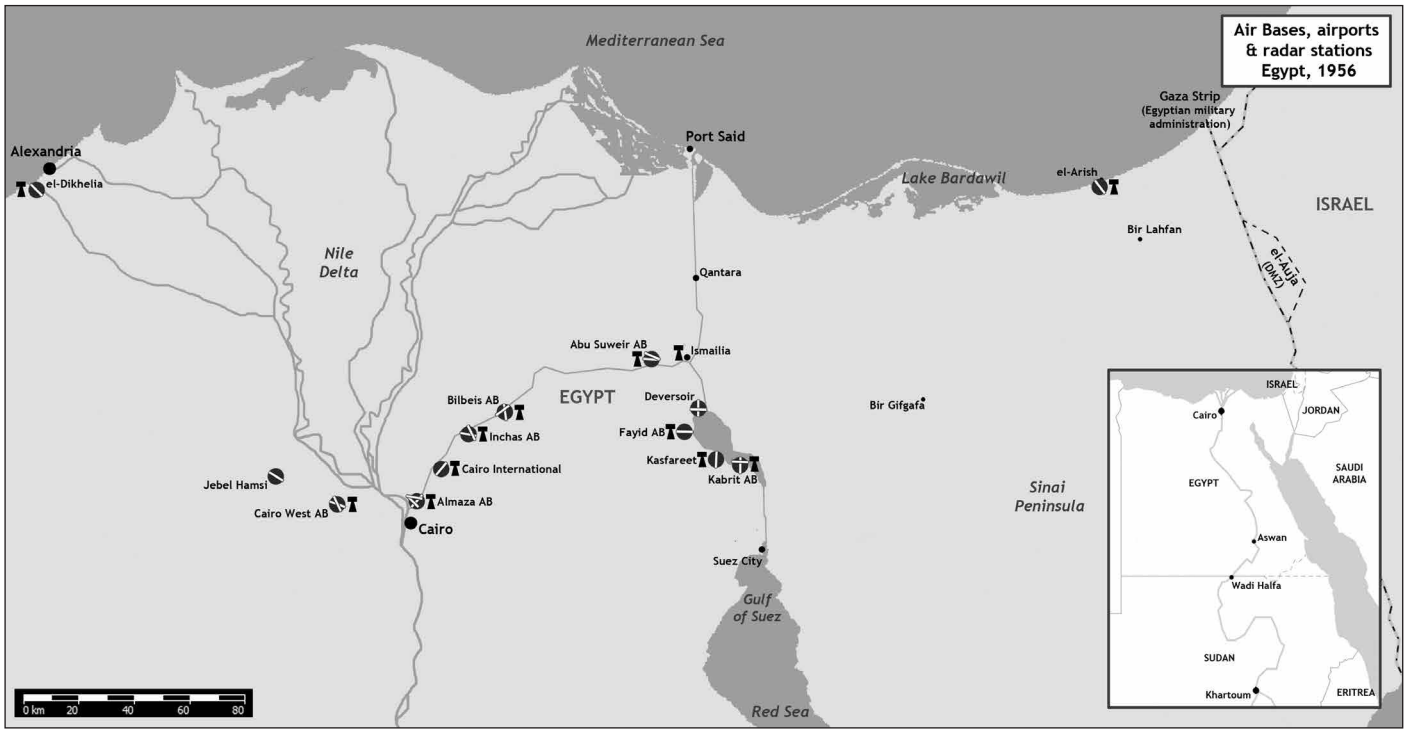
Members of the Czechoslovak advisory group, from left: Egyptian driver, Šus, Skála, Reindl, Plzák. (Ľudovít Solár via Miroslav Irra)



Egyptian pilots rushing towards a row of MiG-15bis (all equipped with slipper-type drop tanks), during their training in early 1956. (Nour Bardai Collection)



A hand-drawn map of the Egyptian radar stations as redeployed during the reorganisation of the EAF air defence system by Czechoslovak advisors in October 1956. (VÚA-VHA Praha)



Based on known air bases of the EAF, and the map above, this map shows all the important locations of the Egyptian air defences in the Suez War in 1956, including major air bases and radar stations in the Nile Delta, the Canal Zone and on the Sinai. Inset is shown the position of Wadi Halfa, in northern Sudan, where Czechoslovak military advisors were withdrawn (via Aswan) during the Suez War of 1956. (Map by Tom Cooper)

commanders would be able to carry out training independently. However, in the end, no Egyptian senior officer was present during the actual training and Czechoslovak instructors carried out instruction of regular fighter pilots. Reindl's unsatisfactory expertise in some areas led to wrong decisions that were vehemently opposed by Solár and Šebek which led to open arguments and sometimes even to disobedience of Reindl's orders. Some instructors informed military attaché Colonel Jaroslav Knébl about the problems in the group. He, in turn, sent dispatches to Prague informing the Czechoslovak top military leadership about the complicated situation in the advisory team. However, his critique related to Reindl's performance was inflated due to professional rivalry. Until the arrival of Major General Jan Reindl, he was the top-ranking Czechoslovak military officer in Egypt. With the presence of the aviation advisory team, all Egyptian requests were forwarded to Reindl not only due to his rank but foremost that he was able, unlike Knébl, to provide usually proper advice and assistance.

The disagreements within the group even became known to the Egyptians. Thus, liaison officer Colonel Abu Said told to the group's interpreter Karel Štrégl that 'it was strange to him how there could be an army in which three different orders were given for one and the same thing and eventually the fourth order was fulfilled'. The unsatisfactory relationships in the team forced Chief of the General Staff Colonel General Václav Kratochvíl to start investigation of the matter including the questioning of Major General Reindl, Colonel Knébl and Egyptian military and air attachés. The outcome was that, despite some problems, the aviation advisory group under Reindl's leadership was fulfilling its mission well.

To calm the situation down, Reindl sent Lieutenant Colonel Solár and Major Šebek home prematurely. Both officers returned to Czechoslovakia on 18 October and in Egypt, they were in turn substituted by a newly arrived instructor, Captain Vladimír Nechanický. As one after-action report later stated: 'Major General […] Reindl, Lieutenant Colonel Solár, and Major Šebek do not have a good reputation within the air force and in terms of organisational skills, they are at a very low level. The mistake is that the Ministry of National Defence sent them to Egypt to train Egyptian pilots at all.'[29]

FLIGHT TRAINING WITH A TASTE OF THE WAR

Meanwhile, Major General Reindl continued in the assessment of the capabilities of the Egyptian air defences. Based on his proposal, the Egyptian Air Force staged a ground-controlled interception exercise on 26 and 27 September which ended as an abysmal failure. According to Reindl's opinion: 'The exercise has shown that the Egyptian air defence system is completely in a desolate state. […] The situation is that Egypt is completely defenceless against attack from the air. The target will not be discovered in the air, and even though it would be tracked completely accidentally and for a few moments, the fighters can not be guided against it at all.' On his initiative, Reindl prepared a plan for the defence of the Suez Canal. Captain Egon Skála was then ordered to deliver the document to the hands of Air Marshal Muhammad Sidki Mahmoud in Cairo.

In October, the Egyptian Air Force performed a reorganisation in which No. 30 Squadron was split and the detached personnel formed the nucleus of No. 20 Squadron. While both units had a complement of 21 pilots after conversion training on MiG-15bis fighters, the original personnel served as instructors or in command functions. Newly arrived pilots had relatively little jet fighter experience since all had around (or slightly more) 100 flight hours on de Havilland Vampire and Gloster Meteor aircraft.

During 30 and 31 October 1956, Egyptians began operating their MiGs in big formations, and gradually won aerial dominance over the Israeli Air Force in the skies over the Sinai. This formation of nine MiG-15bis was photographed while overflying Cairo in July 1956. (Albert Grandolini Collection)

Therefore, the next task of the Czechoslovak aviation advisory group was to provide tactical training for 16 pilots of the recently established No. 20 Squadron at Kabrit air base beginning from 20 October. However, at that time, the undertaking was already 10 days delayed since Egypt did not receive aviation turbine fuel in time. In the meantime, the situation in the Middle East was reaching boiling point. The Suez War began on 29 October 1956 when the Israel Defence Forces launched Operation Kadesh. The Israeli invasion of the Sinai began when 890th Paratroop Battalion was air-dropped into the Sinai Peninsula, east of the Suez Canal near the Mitla Pass. Four Israeli P-51 Mustangs used their wings and propellers to cut all overhead telephone lines in the Sinai, which led to severe disruption of the Egyptian command and control.[30]

Thus, it was only a matter of time before the Israeli aircraft appeared above the air bases with Czechoslovak Air Force instructors – Kabrit (advisory group under the command of Major General Reindl) and Abu Suweir (Major Meduna's team training Syrian personnel). The first air combat over Kabrit between Egyptian MiG-15bis fighters and Israeli Mystère IVA aircraft took place on the afternoon of 30

October. In his after-action report, Major General Reindl described the ensuing dogfight as follows:

> Two MiG-15 flights [with four aircraft each] were ready to launch with the task of ground assault against the tanks. To secure their take-off, one pair was sent over the airfield into an altitude of 4,000 meters [13,123 feet] on our suggestion. When the first flight taxied to the take-off, nine Mystère aircraft arrived, which were immediately attacked by a patrolling pair at an altitude of 6,000 meters [19,685 feet]. MiG-15 airplanes took off in pairs and throughout the launch were under fire by attacking pairs of Mystères. After closing the landing gear, at a low speed, they immediately rolled to the right at an altitude of 50 meters [164 feet], gained speed, and immediately went into the attack. Behind this flight, another pilot took off without orders, he also launched under fire. […] In total two [sic] Mystère airplanes and one MiG-15 were shot down, whose pilot was weaker already during training and he rescued himself with a parachute.
>
> […] On 31 October 1956, the situation was similar, eight MiG-15bises launched at the last minute under the fire of twelve Mystères. Air combat was similar, the enemy lost three aircraft [sic], no MiG-15 was shot down. Then the airfield was heavily bombarded at night, the runway damaged, and on 1 November all aircraft were destroyed on the ground by onboard guns and rockets [of British and French fighter-bombers].

During the air combats over Kabrit, Czechoslovak instructors stationed there provided improvised ground-controlled interception assistance and guided Egyptian fighters visually from the ground against Israeli Mystère IVAs (like Captain Egon Skála did during the dogfight of 30 October).[31]

ON THE RUN

The conflict meant a premature end for the activity of all Czechoslovak military advisory teams deployed in Egypt. Under the impression he could be captured, Major General Jan Reindl panicked and together with his group hastily fled to Cairo. However, they completely forgot to inform Major Meduna's subgroup that was left at Abu Suweir in the dark. Therefore, it was the military attaché, Colonel Knébl, who instructed them to go to the Egyptian capital during the night of 30 to 31 October. Just three hours after Meduna and his men departed Abu Suweir, the air base was bombed out. Subsequently, on 2 November, Chief of the General Staff Colonel General Václav Kratochvíl issued an order which strictly prohibited the participation of Czechoslovak instructors in combat operations. On the same day, it was decided to move all Czechoslovak citizens (except several diplomats and the most essential embassy personnel) from Egypt to Sudan. Although he was the officer with the highest rank, Major General Reindl did not consider it necessary for him to organise the transfer of Czechoslovaks to safety. Instead, he wanted to fly away and demanded a passenger aircraft from the Egyptians. He got nothing and thus together with his group arrived in Aswan by car. In the meantime, the evacuation transport of 119 men, women, and children under the leadership of Captain Jiří Heller departed from Cairo for Aswan. Subsequently, all 169 Czechoslovak citizens led by Captain Bohumil Kadeřábek left for Wadi Halfa in northern Sudan. After several day trek aboard a train from Cairo to Aswan, a ship from Aswan to Wadi Halfa, and several aircraft from Wadi Halfa to Prague, 154 evacuated Czechoslovaks returned home safely during November. The last group of Czechoslovak citizens (including Captain Kadeřábek and interpreter Špelina from Meduna's team) arrived in Ruzyně international airport on 22 November 1956.[32]

However, when the ceasefire came into effect, Reindl's group (together with several members of the embassy staff) had to return from Sudan back to Egypt on 10 November following a request by the Egyptian authorities. Subsequently, part of the team worked at the headquarters of the Egyptian Air Force and carried out a lessons-learned session there for the staff on all identified shortcomings. The second part performed a detailed evaluation of the usability of the surviving armament and equipment. The remaining Czechoslovak advisors helped, among others, in setting up a new airstrip, introducing an alert fighter unit, and establishment of new radar post equipped with the P-8 system. Major General Reindl personally briefed Air Marshal Muhammad Sidki Mahmoud about the deficiencies of the Egyptian Air Force for several days. The activity

An Egyptian SD-100 found abandoned in the Sinai at the end of the Suez War in 1956. (Government Press Office)

of the Czechoslovak aviation advisory group in Egypt definitively ended on 16 December 1956. Around that time, a team of some 15 Soviet instructors arrived in Egypt to carry out tactical and combat training on Il-28 bombers. As recognition of the advisory group's achievements, Major General Jan Reindl received the Order of Merit – Second Class, the highest Egyptian order that could be awarded to a foreigner. The aviation advisory group did not return home empty-handed either, since, under unknown circumstances, their members were able to obtain 'the complete technical and tactical characteristics' of the Canadair Sabre fighter that were handed over to the military attaché and then sent to Czechoslovakia.[33]

3
THE LAST CZECHOSLOVAK ARMS DEAL

The outcome of the Suez War only led to the strengthened ties between Egypt and the Soviet Union. This development was followed by renewed deliveries of arms that would compensate for the losses suffered during the 1956 conflict. Egyptian requests were presented to Soviet officials in Moscow by Brigadier Korra during the second half of December 1956. The Czechoslovak delegation arrived there on 18 December to discuss the parameters of the new arms contract. The next 'Czechoslovak Deal' to the total value of 1.282 billion CSK (63.6 million GBP) was signed on 28 February 1957. However, the Czechoslovak share was 11.6 percent only (i.e. 149 million CSK). Because of this low participation, Soviet political motives prevailed over economic issues, and despite immense Czechoslovak efforts, Prague was not able to carry through better terms of payment. The Egyptians received a 50 percent price reduction while for the rest of the contract's value, credit was provided with an interest rate of 2 percent which was to be paid in goods in 1962 to 1966. Contracted armament, support equipment, and spare parts were to be delivered during 1957 and 1958.

At the same time, this was the last 'Czechoslovak Deal' in which Prague served as a middleman and camouflage for Moscow. From the turn of the 1950s and 1960s, nobody needed Czechoslovak cover, and Prague was not satisfied with terms of payment only favourable to the Egyptians. And last but not least, the Czechoslovak arms industry was not able to deliver modern licence-produced Soviet weapons sought by the Egyptians because higher priority went to the rearming of the Czechoslovak People's Army. The situation was reflected in the contemporary reports of Czechoslovak officials: '… [Moscow] is willing to deliver the latest [military] technology, and

Table 5: Military hardware contracted within the frame of the Czechoslovak-Egyptian arms agreement from 28 February 1957.[2]

Type	Number of examples	Note
7.62mm sniper rifle	1,000	delivery from the USSR
SKS, 7.62mm carbine	125,000	delivery from the USSR
AK-47, 7.62mm assault rifle	30,000	delivery from the USSR
RPD, 7.62mm light machine gun	10,000	delivery from the USSR, 3,000 delivered up to September 1957
SGM, 7.62mm heavy machine gun	1,000	delivery from the USSR
7.62mm round	240,250,000	delivery from the USSR
7.62mm round for SGM machine gun	27,000,000	delivery from the USSR
B-10, 82mm recoilless gun	400	delivery from the USSR
82mm mortar	400	M1941?, used, delivery from the USSR, all delivered up to September 1957
vz. 42 N, 120mm mortar	80	Czechoslovak designation of German *Granatwerfer 42*, delivery from Czechoslovakia
85mm anti-tank gun	100	D-44?, used, delivery from the USSR
vz. 43, 57mm anti-tank gun	75	delivery from Czechoslovakia
DShKM, 12.7mm anti-aircraft machine gun	1,000	used, delivery from the USSR, 128 delivered up to September 1957
vz. 53, 12.7mm quadruple anti-aircraft machine gun	112	delivery from Czechoslovakia, 20 delivered up to September 1957
M1939 (61-K), 37mm anti-aircraft gun	240	used, delivery from the USSR, 108 delivered up to September 1957, Czechoslovak designation vz. 39
B-32, 12.7mm armour-piercing incendiary round	2,500,000	for anti-aircraft machine gun, delivery from the USSR
BZT, 12.7mm armour-piercing incendiary round with tracer	7,500,000	for anti-aircraft machine gun, delivery from the USSR
82mm high explosive fragmentation round	44,000	for B-10, delivery from the USSR
82mm high explosive anti-tank round	44,000	for B-10, delivery from the USSR
82mm fragmentation round	300,000	for mortar, delivery from the USSR

Table 5: Military hardware contracted within the frame of the Czechoslovak-Egyptian arms agreement from 28 February 1957.[2] (*continued*)		
82mm smoke round	70,000	for mortar, delivery from the USSR
120mm high explosive fragmentation round	58,000	for vz. 42 N, delivery from Czechoslovakia
120mm smoke round	5,000	for vz. 42 N, delivery from Czechoslovakia (probably not delivered?)
37mm fragmentation round	980,400	for M1939 (61-K), delivery from the USSR
37mm armour-piercing round	219,600	for M1939 (61-K), delivery from the USSR
57-JO-PTK 43, 57mm fragmentation round	10,500	for vz. 43, delivery from Czechoslovakia
57-JPSv-PTK 43, 57mm armour-piercing round	24,500	for vz. 43, delivery from Czechoslovakia
57mm training round	200	for vz. 43
85mm armour-piercing round with tracer	50,000	for 85mm anti-tank gun, delivery from the USSR
85mm fragmentation round	6,500	for 85mm anti-tank gun, delivery from the USSR
122mm smoke round	4,000	for vz. 38, delivery from Czechoslovakia
equipment for artillery fire control unit	2 sets	delivery from the USSR
P-8, early warning radar	12	used, delivery from the USSR
T-34/85, medium tank	75	delivery from Czechoslovakia, all delivered up to September 1957
BTR-152, armoured personnel carrier	100	delivery from the USSR
MiG-15bis, fighter	30	delivery from Czechoslovakia, all delivered up to September 1957
MiG-15UTI, combat trainer	6	delivery from Czechoslovakia, 10 delivered up to September 1957 (original order was increased to 16 aircraft)
MiG-17F, fighter	77	delivery from the USSR, 16 delivered up to September 1957
Il-28, bomber	30	10 aircraft retired from the inventory of the Soviet Air Force, delivery from the USSR, 15 delivered up to September 1957
Il-28U, training aircraft	2	delivery from the USSR
L-60, liaison aircraft	10	delivery from Czechoslovakia
Yak-11, training aircraft	40	delivery from Czechoslovakia, all delivered up to September 1957
Z-126, training aircraft	50	Z-226T training aircraft was delivered instead, delivery from Czechoslovakia, all delivered up to September 1957
Il-14, transport aircraft for airborne troops	5	delivery from the USSR, all delivered up to September 1957
Mi-1, light utility helicopter	5	delivery from the USSR, all delivered up to September 1957
Mi-4, medium utility helicopter	5	delivery from the USSR, all delivered up to September 1957
ZAB-250-130V, incendiary bomb	900	delivery from the USSR
SAB-100-90, flare bomb	1,000	delivery from the USSR
FOTAB-100-80, photoflash bomb	1,000	delivery from the USSR
Streontsi-I, radar training device	1	delivery from the USSR
TL-1, training device	2	delivery from the USSR
OSP-48, instrument landing system	4 sets	ground support equipment for delivered aircraft, delivery from the USSR
SRO, identification system friend or foe	200	support equipment for delivered aircraft, delivery from the USSR
PRM-49, radio marker	9	ground support equipment for delivered aircraft, delivery from the USSR
GAZ-69, light off-road vehicle	200	delivery from the USSR
GAZ-63, light truck	1,300	delivery from the USSR
ZiL-151, medium truck	530	delivery from the USSR
YaAZ-210, heavy truck	15	delivery from the USSR
YaAZ-210G, trailer tractor	58	delivery from the USSR
K-51, mobile crane	?	delivery from the USSR
K-104, mobile crane	5	delivery from the USSR

Table 5: Military hardware contracted within the frame of the Czechoslovak-Egyptian arms agreement from 28 February 1957.[2] (*continued*)		
MTVO, mobile workshop for repairs of tank armament and optical equipment	5	delivery from the USSR
MERO, mobile field workshop	9	delivery from the USSR
VAREM, mobile workshop for repairs of vehicles	9	delivery from the USSR
PM-2, mobile regimental artillery workshop	6	delivery from the USSR
DARM-4, mobile divisional artillery workshop	3	delivery from the USSR
workshop for repair of tires	9	delivery from Czechoslovakia
workshop for repairs of diesel systems	4	delivery from Czechoslovakia
workshop for repairs of engines	1	delivery from Czechoslovakia
joiners' workshop	4	delivery from Czechoslovakia
PES 15/9A, mobile power generating set	15	delivery from the USSR
PZS-1,5, battery charging station	30	delivery from the USSR
PZS-3, battery charging station	20	delivery from the USSR
ASB, welding set	9	delivery from the USSR
PARM-2, mobile aircraft workshop	1	delivery from the USSR
ARP-5, mobile radio direction-finder	15	ground support equipment for delivered aircraft, delivery from the USSR
RAS-UKV, mobile radio station	15	ground support equipment for delivered aircraft, delivery from the USSR
RSK-1A, mobile radio station	15	ground support equipment for delivered aircraft, delivery from the USSR
RAF KV-5, mobile radio station	6	ground support equipment for delivered aircraft, delivery from the USSR
AKZS-40, mobile oxygen-filling station	7	ground support equipment for delivered aircraft, delivery from the USSR
AZS-4, accumulator charging station	28	ground support equipment for delivered aircraft, delivery from the USSR
AKS-8, compressor	14	ground support equipment for delivered aircraft, delivery from the USSR
APA-2, aircraft start unit	22	ground support equipment for delivered aircraft, delivery from the USSR
TZ-200, fuel tank truck	40	ground support equipment for delivered aircraft, delivery from the USSR
TZ-16, fuel tank semi-trailer	15	ground support equipment for delivered aircraft, delivery from the USSR
PMZ-15, airfield firefighting vehicle	30	ground support equipment for delivered aircraft, delivery from the USSR
M-3, mobile workshop for repairs of communication equipment	5	delivery from the USSR
U2-AP, trailer	50	delivery from the USSR
2P-4, trailer	50	delivery from the USSR
MAZ-5203, trailer	8	delivery from the USSR
10-RT, radio station	1,500	delivery from the USSR
RPN, radio station	50	delivery from the USSR
RSB-F3, radio station	38	delivery from the USSR (8 radio stations as ground support equipment for delivered aircraft)
R-103, radio station	50	delivery from the USSR
R-105, radio station	1,000	delivery from the USSR
R-106, radio station	1,200	delivery from the USSR
RM-31S, radio station	60	delivery from Czechoslovakia
RM-31T, radio station	70	delivery from Czechoslovakia
TP-25, field telephone	2,000	delivery from Czechoslovakia
TÚ-11, field telephone exchange	100	delivery from Czechoslovakia
PZS-1,5, battery charger	50	delivery from the USSR
PES-0,75, power generating set	250	delivery from the USSR

Table 5: Military hardware contracted within the frame of the Czechoslovak-Egyptian arms agreement from 28 February 1957.[2] (*continued*)		
motor torpedo boat	12	delivery from the USSR
cargo ship (3,200 tonnes)	1	delivery from the USSR
medium submarine	3	delivery from the USSR
25mm fragmentation incendiary round with tracer	144	delivery from the USSR
53-38, torpedo	180	delivery from the USSR
ET-80, torpedo	72	delivery from the USSR
the equipment for submarine base		delivery from the USSR
the equipment for ship repair workshop		delivery from the USSR
spare parts for delivered motor torpedo boats and submarines		delivery from the USSR
spare parts for delivered aircraft and vehicles, spare engines and radio stations		delivery from the USSR and Czechoslovakia planned for 1957 and 1958

even such that was still not delivered to Czechoslovakia or other countries of the Socialist Camp.'[1]

COURSES FOR THE EGYPTIAN MILITARY PERSONNEL IN CZECHOSLOVAKIA

In total, up to 31 December 1956, 127 Czechoslovak and 216 Soviet military specialists (including interpreters) were sent to Egypt. A further 43 training courses for 130 Egyptian soldiers took place at military installations across Czechoslovakia. During the first half of 1957, an additional 76 Czechoslovak and 61 Soviet advisors worked in Egypt. During the same timeframe, the Czechoslovak People's Army organised 23 training courses for 192 Egyptian trainees.[3]

Some of the Soviet advisors deployed in Egypt at that time were disguised as Czechoslovak citizens. Therefore, some officials at the Ministry of National Defence in Prague were quite surprised when the Czechoslovak military attaché in Cairo sent a memo in which he informed of the death of 'comrade Šimůnek' in an aviation accident. As it subsequently turned out, the person in question was Ivan Fedorovich Shchukin, a Soviet officer and instructor for repair of Il-28 bombers. The accident occurred on 29 May 1957 with another 28 people killed in the wreckage of a passenger airplane, including Soviet interpreter Nikolai Alexandrovich Proshchenko.[4]

New training courses were contracted as supplements to Contract No. 155-A (awarded on 12 December 1955, training of Egyptian military personnel in Egypt), No. 155-B (awarded on 12 December 1955, training of Egyptian military personnel in Czechoslovakia), No. 155-B/1 (awarded on 8 October 1956, training of Egyptian military personnel in Czechoslovakia), and No. 155-B/2 (awarded

Through 1957 and 1958, training of foreign soldiers took place across virtually the entire territory of the Republic of Czechoslovakia. (VÚA-VHA Praha via Milan Vyhlídal)

In similar fashion, weapon demonstrations for foreign military officials took place at an even larger number of sites. (VÚA-VHA Praha via Milan Vyhlídal)

Table 6: Training courses for Egyptian Air Force personnel in Czechoslovakia, October 1956-December 1958[6]

Period	Training course	Training facility	Location	Number of graduates
25 October 1956- 28 November 1956	training of mechanics for Il-28 bombers	25th Bombing Aviation Regiment	Přerov	3
25 October 1956- 28 November 1956	training of mechanics for MiG-15bis fighters	Aviation Training School	Liptovský Mikuláš	3
25 October 1956- 28 November 1956	training of mechanics for Yak-11 trainers	Aviation Training School	Liptovský Mikuláš	3
25 October 1956- 28 November 1956	training of mechanics for electrical equipment of MiG-15bis fighters	Aviation Training School	Liptovský Mikuláš	3
25 October 1956- 28 November 1956	training of mechanics for electrical equipment of Yak-11 trainers	Aviation Training School	Liptovský Mikuláš	
25 October 1956- 28 November 1956	training of mechanics for electrical equipment of Il-28 bombers	Aviation Training School, 25th Bombing Aviation Regiment	Liptovský Mikuláš, Přerov	
25 October 1956- 28 November 1956	training of mechanics for aircraft instruments	Aviation Training School	Liptovský Mikuláš	3
25 October 1956- 28 November 1956	training of mechanics for hydraulic systems	Aviation Training School	Liptovský Mikuláš	3
25 October 1956- 28 November 1956	repairs of RD-45F, VK-1, and ASh-21 aircraft engines	Repair Plant Malešice	Malešice (district of Prague)	3
25 October 1956- 28 November 1956	repairs of Yak-11, MiG-15bis, and Il-28 airframes	Repair Plant Kbely	Kbely	
2 January 1957- 22 July 1957	training of pilots on MiG-15bis	2nd Aviation Training Regiment	Čáslav	46
2 January 1957- 12 July 1957	training of instructors in night flying on MiG-15bis	6th Fighter Aviation Division	Čáslav	2
2 January 1957- 30 June 1957	training of doctors in aviation medicine	Institute of Aviation Medicine	Prague	2

Table 6: Training courses for Egyptian Air Force personnel in Czechoslovakia, October 1956 – December 1958[6] (*continued*)				
26 March 1957- 3 June 1957	training in a ground-controlled interception with P-8 radar	6th Fighter Aviation Division	Čáslav	18
26 March 1957- 5 June 1957	training of P-8 technicians	6th Fighter Aviation Division	Čáslav	6
2 April 1957- 12 June 1957	maintenance and repairs of gunsights and gun cameras	Aviation Training School, Repair Plant Kbely	Liptovský Mikuláš, Kbely	7
10 June 1957- 12 August 1957	training of instructors for PCK-53 and STL-2 simulators	6th Fighter Aviation Division	Čáslav	4
22 July 1957- 8 August 1957	training of interception instructors on MiG-15bis	6th Fighter Aviation Division	Čáslav	2
22 July 1957- 5 August 1957	training of fighter-bomber instructors on MiG-15bis	2nd Aviation Training Regiment	Čáslav	2
3 June 1957- 25 August 1957	training of doctors for medical care of pilots	Institute of Aviation Medicine	Prague	3
24 January 1957- 27 September 1957	training of gunnery officers	6th Fighter Aviation Division	Čáslav	3
3 April 1957- 28 September 1957	maintenance and repairs of radio and radar equipment of Il-28	Repair Plant Kbely	Kbely	3
10 June 1957- 13 January 1958	maintenance and repairs of PCK-53 and STL-2	6th Fighter Aviation Division	Čáslav	4
1 July 1957- 5 October 1957	training of crews on Il-28	29th Bombing Aviation Regiment	Mladá	45
1 July 1957- 21 October 1957	training of pilots on MiG-15bis	2nd Aviation Training Regiment	Čáslav	18

Table 7: Training courses for Egyptian Army personnel in Czechoslovakia, October 1956-December 1958[7]		
Period	**Training course**	**Number of trainees**
7 February 1957- 30 May 1957	T-34/85 tank – description, operation, driving, repairs	8
7 February 1957- 13 April 1957	T-34/85 tank – description, firing rules	8
7 February 1957- 22 March 1957	RM-31T radio station – description, maintenance, operation	6
14 February 1957- 30 March 1957	vz. 37 S howitzer – description, maintenance, assuming the firing position, fire control	6
18 February 1957- 26 March 1957	vz. 53 quadruple anti-aircraft machine gun – description, combat use	6
25 February 1957- 30 April 1957	vz. 42 N mortar – description, maintenance, assuming the firing position, fire control	4
6 May 1957- 29 July 1957	T-34/85 tank – description, operation, inspection, storage	10
7 May 1957- 7 August 1957	infantry weapons – description, maintenance, storage, inspection	6
7 May 1957- 23 August 1957	artillery armament – description, maintenance, storage, inspection	6
12 May 1957- 29 August 1957	JAWA 250 and JAWA 350, Praga V3S, Tatra 111, Škoda 706, GAZ-69, ZiS-151	10
6 May 1957- 31 July 1957	RM-31A, RM-31S, RM-31P, RM-31T, and 10RT-21 radio stations, SON-4 fire control radar, PUAZO-4a fire control director – description, maintenance, inspection, repairs	8
21 May 1957- 20 July 1957	RM-31A, RM-31S, RM-31P, RM-31T, 10RT-21 radio stations – description, maintenance, inspection, repairs	6

Table 7: Training courses for Egyptian Army personnel in Czechoslovakia, October 1956-December 1958[7] (*continued*)		
21 May 1957- 29 July 1957	RM-31A, RM-31S, RM-31P, 10RT-21 radio stations – description, maintenance, inspection, repairs	6
9 September- 21 November 1957	tank armament: 85mm gun and 100mm gun – description, maintenance, repairs	5
11 September- 17 December 1957	ammunition – assembly and maintenance	8
14 August 1957- 12 November 1957	infantry weapons – description, maintenance, inspection, repairs	6
14 August 1957- 23 December 1957	optical equipment – description, maintenance, inspection, repairs	5
20 August 1957- 8 December 1957	SON-4 fire control radar – description, maintenance, inspection, routine repairs	5
9 September 1957- 27 December 1957	vz. 31/37 gun, vz. 37 S howitzer, vz. 38 howitzer, vz. 43 anti-tank gun	6
9 September 1957- 3 December 1957	vz. 39 anti-aircraft gun, vz. 44 anti-aircraft gun, vz. 42 N mortar, vz. 51 multiple rocket launcher – description, maintenance, repairs	6
6 May 1958- 3 December 1958	technical adjutant of the tank regiment	11
2 October 1958- 31 December 1958	staff officer for army-air force cooperation	11

on 4 February 1957, training of Egyptian military personnel in Czechoslovakia). Respective courses for members of the Egyptian Air Force and the Egyptian Army organised in Czechoslovakia are listed in Tables 6 and 7.[5]

The Egyptians placed the greatest emphasis on the training of air force personnel which led to the instruction of number MiG-15bis fighter pilots and Il-28 bomber crews. However, limited experience of the Main Technical Directorate (*Hlavní technická správa*, HTS) of the Ministry of Foreign Trade in contracting training courses subsequently caused many problems for the Czechoslovak Air Force. The number of trained Egyptian airmen was so great that it stretched the Czechoslovak training capacity to the limits. It was no exception that Czechoslovak Air Force personnel at respective air bases had to serve 12 to 14 hours daily including Sundays. Even the commander of one aviation division had to serve as a regular instructor pilot in order to manage the time schedule of the training. The HTS also signed a contract for the training of Egyptian instructors for STL-2 simulators and repairs of the radio and radar equipment of Il-28 bombers. However, the Czechoslovak Air Force lacked not only respective teaching aids but also its own instructors. Therefore, Moscow had to remedy the situation and dispatch its personnel and special testing devices to Czechoslovakia. All these problems were further compounded by excessive bureaucracy and the lack of skilled interpreters.[8]

A row of three MiG-17Fs (foreground), and four MiG-15bis, on their return to one of the air bases damaged by British air strikes during the Suez War. (Dr David Nicolle Collection)

A MiG-15bis of the Czechoslovak Air Force (serial number UF-40 of the 2nd Aviation Training Regiment) after el-Shennawy's landing at Schwechat International, outside Vienna. (Nour Bardai Collection)

The most important training undertaking was undoubtedly the instruction of 50 Egyptian pilots, recent graduates of the Air Force College with some 20 flight hours on the Yak-11 trainer and on the MiG-15bis fighter. The commander of the Egyptian group was Lieutenant Colonel Yehia el Aidaros The course commenced at Čáslav air base at the local 2nd Aviation Training Regiment (*2. letecký školní pluk*) from 2 January 1957. However, the training ran into problems very early on which resulted in a considerable delay and subsequent Egyptian complaints. The reasons were numerous: poor weather conditions, shortage of instructor pilots (one instructor per 10 students), overcrowded conditions at Čáslav air base (two training squadrons of Egyptian student pilots, one training squadron of Czechoslovak student pilots, complete 20th Fighter Aviation Regiment [*20. stíhací letecký pluk*], and the headquarters of 6th Fighter Aviation Division [*6. stíhací letecká divize*]), and the ignorance of responsible officers at the Air Force Command at Prague. In the beginning, all pilots underwent theoretical instruction and preparatory flying on Yak-11 trainers averaging 22 flights lasting 8.57 flight hours.

The training at Čáslav was accompanied by several incidents. On 21 March 1957, during taxiing for the take-off of the next flight, student pilot Samir Abd el Razek drove his factory fresh MiG-15bis onto the grass strip. Due to previous intensive braking, MiG's brakes became overheated and lost their effectiveness. El Razek tried to return to the taxiway but because of wet ground, the aircraft turned sharply, drove on some 15 meters (16 yards), and hit a nearby MiG-15UTI crewed by Waffa Sherif and instructor Captain Jiří König. Both airplanes ended up with damaged port sections of their wings and had to be repaired. In total, eight aircraft were damaged by Egyptian student pilots during the course.

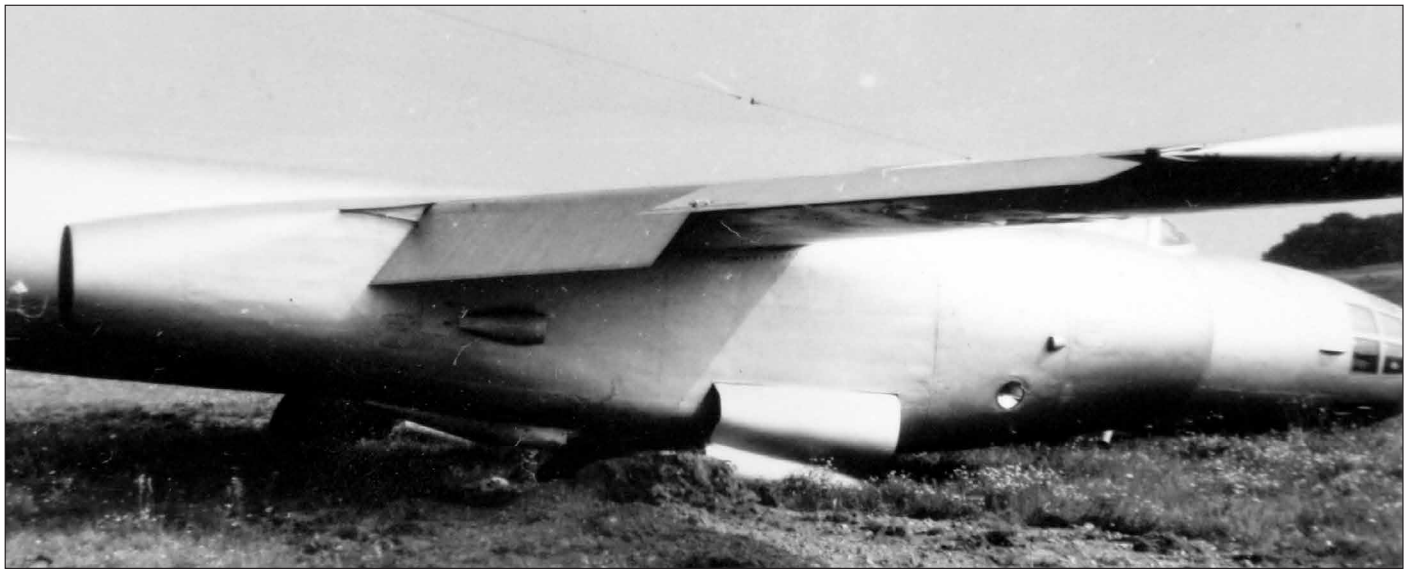
Despite the fact that the pilot training, like all other military courses for foreign armed forces undertaken in Czechoslovakia at that time, was conducted under the conditions of utmost secrecy, Western observers could nevertheless get a grasp of what was going on behind the Iron Curtain. On 14 May 1957, on a training flight in the direction of the Austrian border, a MiG-15 piloted by Abdel Monel el Shennawy suffered a compass failure, resulting in the pilot losing direction and, after running out of fuel, landing at Schwechat airport near Vienna. A similar loss of orientation had been experienced by Samir Ghalij already on 28 April but he managed to land at Brno airport.[9]

In March 1957, the Egyptians issued a new request for the training for an additional 38 MiG-15 and Il-28 pilots. However, the Czechoslovak General Staff was reluctant to approve it due to the limited training capacity of the Czechoslovak Air Force and the possibility that flight training could reveal to the Egyptians some information about the operation of Czechoslovak air defence forces. However, the Egyptian military attaché pressed the issue further and, in the end, a compromise was reached. Hence, 30 Egyptian pilots finished their training at Čáslav prematurely and left for Egypt. On average, one student pilot completed 65 flights (18.28 flight hours) on the MiG-15UTI and 61 flights (26.56 flight hours) on the MiG-15bis. The course prepared Egyptian pilots for combat action in elements up to 10,000 meters (32,808 feet) and individually at the operational ceiling. They also completed air-to-air and air-to-ground gunnery training together with the bombardment of ground targets. Back in Egypt, their flight instruction continued on MiG-17F fighters under the guidance of Czechoslovak instructors. Subsequently, Czechoslovakia invited 19 new Egyptian fledgling eagles ready for conversion on the MiG-15bis. Together with them, 15 Il-28 crews arrived to go through basic combat training. Despite the initial delay, the remaining 16 MiG-15bis pilots (four from the original number of 50 were dismissed) graduated from the course up to the end of July, in accordance with the original schedule. On average, they carried out 65 flights (19.03 flight hours) on MiG-15UTI and 73 flights (35.25 flight hours) on MiG-15bis per pilot. In comparison to the first 30 students, the remaining 16 Egyptian graduates were additionally trained for air combat in flights at medium altitudes.

While 12 of them returned home on 23 and 25 July, the best four Egyptians from the second group remained in Čáslav air base and underwent additional training as interception instructors at the 6th Fighter Aviation Division (Mohammed Abd Eldin Barakat, Mohamed Abd el Aziz) and fighter-bomber instructors at the 2nd Aviation Training Regiment (Farouk Saved Salama, Salah Elminawi).[10]

When the course was nearing its end, the commander of the 2nd Aviation Training Regiment observed:

The Il-28 crash-landed by an Egyptian crew at Mladá air base on 8 August 1957. (VÚA-VHA Praha)

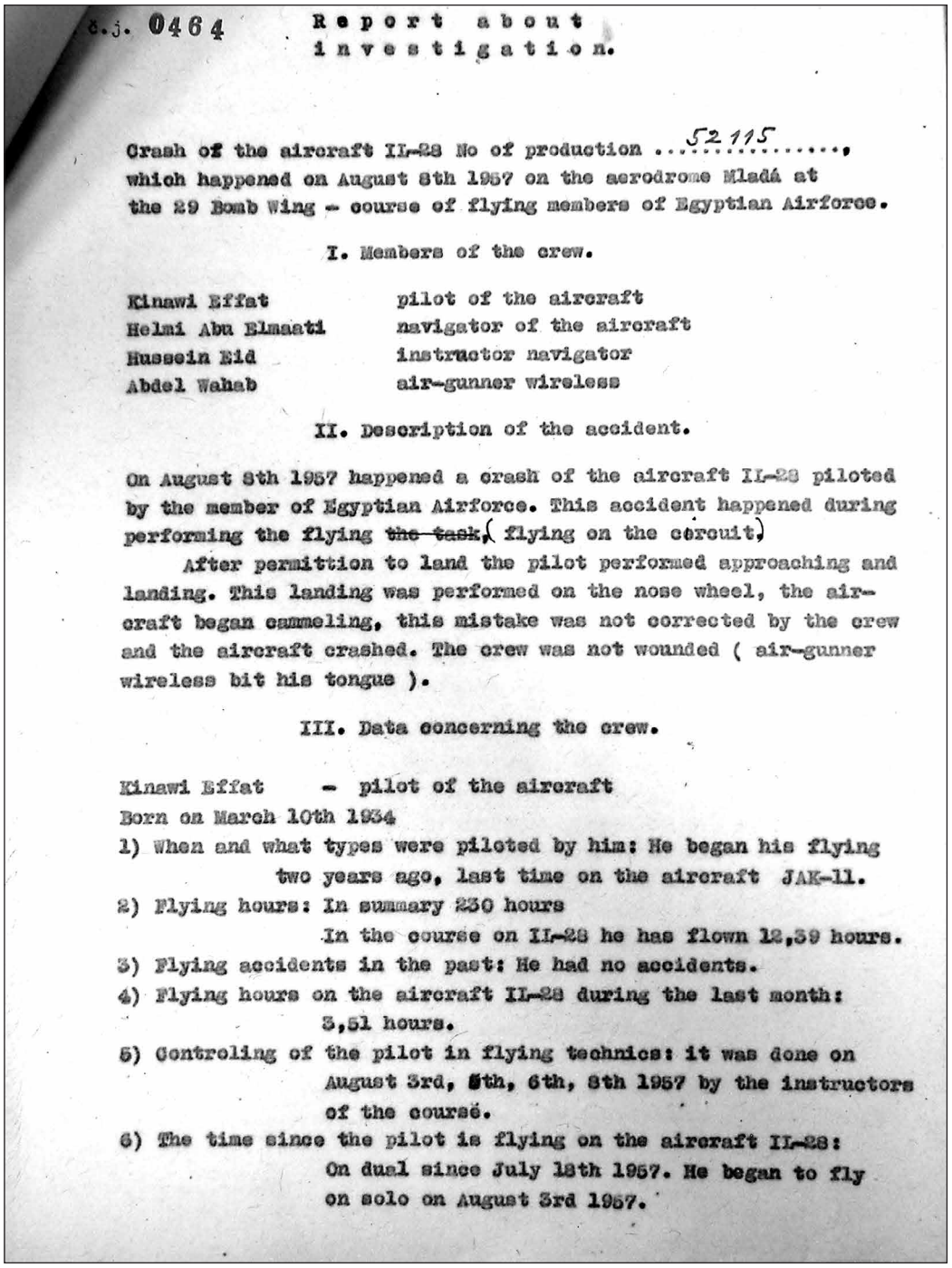


A side-view of the same Il-28. While the damage appears to have been minimal, the structure of the jet was bent to the point where it was written off. (VÚA-VHA Praha)

> I consider it necessary to point out that, with a few exceptions, the trainees of Operation 105 were not interested in the successful and quality completion of training at the required level. It was mainly due to a lack of interest during the ground school, where several trainees regularly slept. Similarly, during flying, Operation 105 pilots had to be searched for and notified that they were to board the aircraft and perform the mission. […] Arranging personal free time for Operation 105 trainees has become a difficult task because the vast majority of trainees were interested purely in the visit of entertainment venues and intercourse with women.[11]

The second batch of young Egyptian pilots commenced their conversion training on MiG-15bis fighters at the 2nd Aviation Training Regiment on 1 July 1957. Following theoretical lectures, the flight training began with familiarisation flights on the Yak-11 trainer, with each student pilot completing on average four flights (2.31 flight hours). Unlike the first group, these Egyptian pilots were younger and sometimes undisciplined and unconcerned about flight safety. Some students recovered from their shooting runs against ground targets in the firing range at too low altitude. Although they were warned by the instructors, one Egyptian pilot repeated this feat just several days later. During the recovery, he hit several trees with the starboard side of his airplane which ended with a damaged airbrake. Czechoslovak officers lost their patience and the culprit was dismissed from the training immediately. Therefore, on 22 October 1957, 18 Egyptian pilots graduated from the course which prepared them for combat action in elements up to 10,000 meters (32,808 feet), in flights at medium altitudes and individually at the operational ceiling. They also completed air-to-air and air-to-ground gunnery training together with the bombardment of ground targets. On average, one pilot accomplished 62 flights (18.21 flight hours) on the MiG-15UTI and 67 flights (32.33 flight hours) on the MiG-15bis. In total, Egyptian student pilots damaged six MiG-15s during the course which had to be repaired at the regimental repair shop of the 2nd Aviation Training Regiment.[12]

The training of bomber crews was organised at Mladá air base within the ranks of the 29th Bombing Aviation Regiment (*29. bombardovací letecký pluk*) from 1 July 1957. The training was attended by 14 pilots (the 15th pilot was Colonel Arafa, the commander of the Egyptian group who was carrying out only flights for maintaining his proficiency), 15 navigators/bombardiers, and 15 tail gunners/radio operators. The course started with theoretical instruction and the subsequent examination. Thereafter, the Egyptian crews performed short introductory flights on the Il-12



č.j. 0464

Report about investigation.

Crash of the aircraft IL-28 No of production 52115, which happened on August 8th 1957 on the aerodrome Mladá at the 29 Bomb Wing - course of flying members of Egyptian Airforce.

I. Members of the crew.

Kinawi Effat	pilot of the aircraft
Helmi Abu Elmaati	navigator of the aircraft
Hussein Eid	instructor navigator
Abdel Wahab	air-gunner wireless

II. Description of the accident.

On August 8th 1957 happened a crash of the aircraft IL-28 piloted by the member of Egyptian Airforce. This accident happened during performing the flying ~~the task~~ (flying on the circuit).

After permittion to land the pilot performed approaching and landing. This landing was performed on the nose wheel, the aircraft began cammeling, this mistake was not corrected by the crew and the aircraft crashed. The crew was not wounded (air-gunner wireless bit his tongue).

III. Data concerning the crew.

Kinawi Effat - pilot of the aircraft
Born on March 10th 1934
1) When and what types were piloted by him: He began his flying two years ago, last time on the aircraft JAK-11.
2) Flying hours: In summary 230 hours
In the course on IL-28 he has flown 12,39 hours.
3) Flying accidents in the past: He had no accidents.
4) Flying hours on the aircraft IL-28 during the last month: 3,51 hours.
5) Controling of the pilot in flying technics: it was done on August 3rd, 5th, 6th, 8th 1957 by the instructors of the course.
6) The time since the pilot is flying on the aircraft IL-28: On dual since July 18th 1957. He began to fly on solo on August 3rd 1957.

Page 1 of the post-accident report of the Il-28 at the Mladá air base, on 8 August 1957. The crew is listed as Hinawi Effat (pilot), Helmi Abu Elmaati (navigator), Hussein Eid (instructor navigator) and Abdel Wahab (gunner and wireless operator). (VÚA-VHA Praha)

transport airplane. This was followed by training on Il-28U trainers and Il-28 bombers which encompassed a total of 1,281 flights lasting 379 hours and 10 minutes. The Egyptian bomber crews were trained to fly under daylight VFR (visual flight rules) conditions in elements and flights in medium altitudes and IFR (instrument flight rules) conditions individually. During the training, one aircraft was damaged beyond repair during landing at Mladá on 8 August, while the second one had to be repaired at Aircraft Repair Plant Kbely (*Letecké opravny Kbely*). The final stages of the flight training were disrupted by three Egyptian airmen contracting flu, which resulted in the course's prolongation to 5 October 1957.[13]

The syllabuses and their scope (primarily in terms of tactical training) for all these three flight courses were approved by Soviet military leadership beforehand.[14]

4
INFRASTRUCTURE AND HIGHER MILITARY EDUCATION

After the Suez War, the deployment of Czechoslovak advisors in Egypt was restored only at the beginning of 1957 when four technical teams were dispatched from Czechoslovakia with the task to assist in the maintenance and repair of combat aircraft, tanks, artillery armament, and infantry weapons.

The aviation team commenced its stay in Egypt at Almaza, Abu Suweir, and Kabrid air bases with the inspection of MiG-15UTI, MiG-15bis, and MiG-17F aircraft damaged during the conflict and their determination for repair. Various parts and subassemblies from destroyed airplanes were proposed by Czechoslovak technicians for further use either in MiGs currently under repair or as spare parts for storage at respective warehouses. Czechoslovak advisors then checked materiel stored in the depot at Khanka which survived the Suez War without a scratch. The team subsequently moved to Almaza where its members performed instruction of Egyptian maintenance personnel and assisted during the repairs of MiGs damaged during the conflict. Moreover, Czechoslovak technicians proposed a new organisation of the Almaza aircraft repair workshop since its existing functioning was considered unsatisfactory.

As of 25 January 1957, the Egyptian Air Force had 14 airworthy MiGs (three MiG-17Fs, 10 MiG-15bis, one MiG-15UTI), from which eight were repaired with Czechoslovak assistance (three MiG-17Fs, four MiG-15bis, one MiG-15UTI), an additional four aircraft were under repair (one MiG-17F, two MiG-15bis, one MiG-15UTI) and five aircraft awaited repair due to the lack of spare parts (three MiG-17Fs and two MiG-15bis). Moreover, the Czechoslovak team inspected damaged and destroyed Yak-11 trainers at Kabrit and Bilbeis. From the overall number of 25 aircraft, 15 were complete write-offs that could be used only as a limited source of spare parts. Six airplanes were repaired up to 21 January 1957, while the remaining four Yaks needed general overhaul which was completed around 10 February 1957.

From late January until mid-February, the team continued with the instruction of Egyptian aircraft mechanics and assisted with repairs of damaged MiGs, which were going slowly because of a lack of rivets and proper tools, not to mention the unsuitable hangar. The training of Egyptian technicians in a 100-hour inspection on airframe, engine, and instruments of MiG-15s was completed on 28 February. Thereafter, between 3 and 9 March 1957, Czechoslovak advisors carried out the assembly of four MiG-15UTI combat trainers at Almaza. Following the approval of the Egyptian authorities, the Czechoslovak aviation advisory team departed Egypt on 14 March 1957.

The work of Czechoslovak tank and artillery technicians had a similar pattern. Between 2 and 17 January, they carried out technical inspection of 111 T-34/85 tanks, 36 SD-100 self-propelled guns, and 10 armoured recovery vehicles based on T-34 chassis at units around Cairo. The inspection aimed to evaluate the technical condition and serviceability of these vehicles together with their main armament. Czechoslovak advisors could observe a general lack of proper maintenance such as the neglect of 1st and 2nd periodic inspections. On 18 January, tank technicians began to work in a squadron workshop. Local mechanics were not equipped with tools and cleaning materials. Moreover, the adjacent storeroom had an insufficient number of spare parts.

Both teams worked at a field workshop near Cairo until 9 February. The facility performed repairs of defects on 20 T-34/85s from the previous inspection carried out by Czechoslovak technicians. Up to their departure, five tanks were repaired and test-driven. The work was complicated by the disinterest of Egyptian technicians and protracted deliveries of spare parts and specialist tools. From 10 February, the advisors performed a technical inspection at an artillery unit near Cairo. During six days, they checked 31 T-34/85 tanks and 15 SD-100 self-propelled guns. At the same time, they carried out small repairs on these vehicles as required. An additional 18 SD-100s were inspected and repaired up to 21 February. During the next day, the tank technicians were moved to the main armour repair workshop where they supervised repair works of local mechanics for eight days. There, they could observe deficiencies in the knowledge of Egyptian personnel together with the lack of proper tools and spare parts in the local warehouse. Although one of the main tasks of the Czechoslovak tank team was to provide training for local maintenance personnel, the Egyptian authorities changed their idea and thus Czechoslovak technicians carried out the inspection, maintenance, and repairs of Egyptian T-34/85 tanks and SD-100 self-propelled guns until the end of their stay in Egypt on 16 April. Team leader Benda and advisor Osadský returned home two days later while the remaining two technicians left Egypt in early May.

Meanwhile, technicians from the artillery team continued in the inspection and repair of the main armament of T-34/85s, with 138 such guns worked on up to 10 March, and 76 SD-100s which showed signs of negligent maintenance. On the other hand, generally very good maintenance was typical for vz. 31/37 guns, with 10 examples inspected and repaired up to 10 March, along with vz. 38 howitzer, of which 33 examples were repaired. During their stay, the Czechoslovak artillery technician could hear the complaints of Egyptian commanders, according to whom some 10 percent of the delivered ammunition was defective. Members of this team completed their activities in Egypt on 25 April and returned home on 2 May.

The last Czechoslovak technical advisory team, led by Major Vendelín Fígel deployed to Egypt for the first four months of 1957, was a group of two technicians (including the commander) for repair of Czechoslovak infantry weapons: vz. 52 rifles, vz. 52 machine guns, T-21 bazookas, and vz. 38/46 anti-aircraft machine guns. From 11 to 18 January, the advisors checked the conditions of the Egyptian military workshop and prepared training for its workers according to their findings. The weapons delivered from combat units for repairs usually showed signs of rough handling and lack of proper maintenance. The repairs at the workshop were mostly done superficially. Moreover, as in previous instances, available stocks of some spare parts were minimal. The training of the 54 employees commenced on 19 January and lasted until 14 February. Thereafter, to prevent poor handling and maintenance, Czechoslovak technicians visited an infantry school and a repair school near Cairo and 15 infantry units around Cairo, Ismailia, Faid, and Suez. To remedy the lack of knowledge related to maintenance and repairs of Czechoslovak weapons within the ranks of Egyptian troops, the advisors carried out three training courses for local technicians and maintenance instructors up to 28 April. They departed for Czechoslovakia on 2 May 1957.[1]

CONVERSION ON MIG-17F FIGHTERS

In the meantime, the hardware ordered under the Czechoslovak-Egyptian arms agreement from 28 February 1957 was constantly

flowing into the Egyptian port facilities. As in the past, many deliveries of mostly spare parts were chaotic and without proper documentation, so nobody knew properly what equipment was delivered. While combat airplanes were immediately sent to respective combat units, the remaining armament was usually transferred to central military depots. Moreover, Czechoslovak Military Attaché Colonel Jaroslav Knébl complained that combat aircraft were put on the deck of Soviet cargo ships without any disguise or cover which meant that the concealment of the shipments was completely non-existent.[2]

1st Lieutenant Josef Mikloš (in the cockpit) and interpreter Jiří Šebánek (standing in front of the MiG-17F) during the conversion training of Egyptian pilots on MiG-17F fighters at Kabrit air base in 1957. (Míťa Milota via Miroslav Irra)

The conversion training of 30 Egyptian fighter pilots, who were originally trained at Čáslav air base, continued at Kabrit from 27 July 1957 under the guidance of Czechoslovak instructors led by Captain Jan Kovář (other members of the team are mentioned in Table 8). Following theoretical lectures, the actual flight training on MiG-15UTIs and MiG-17Fs commenced on 4 August. The course was hindered by inadequate maintenance which put sometimes up to three aircraft out of commission during a day. The reason for this situation was intensive flight activity which in turn meant a limited amount of time for the ground crews to correctly perform their job. The same men had to ensure the operation of the MiGs during the day and then repair their malfunctions during the night. Moreover, according to the opinion of Czechoslovak instructors, the knowledge of Egyptian technicians related to the maintenance and repairs of MiG fighters was quite limited.

In total, Czechoslovak instructor pilots performed 133 flights lasting 52.45 flight hours during the conversion course. Overall, Czechoslovak pilots and their Egyptian students flew 582 hours.

Table 8: Czechoslovak Air Force advisory teams in Egypt, July-November 1957[4]

Rank and name	Parent unit	Date of arrival	Date of departure	Note
Training of Egyptian pilots on MiG-17F fighters				
Captain Jan Kovář	8th Fighter Aviation Regiment	9 July 1957	October 1957	commander
1st Lieutenant Míťa Milota	8th Fighter Aviation Regiment	9 July 1957	October 1957	
1st Lieutenant Zdeněk Zelenka	5th Fighter Aviation Regiment	9 July 1957	-	died on 19 September 1957
1st Lieutenant Ján Labaj	5th Fighter Aviation Regiment	9 July 1957	October 1957	
1st Lieutenant Josef Mikloš	11th Fighter Aviation Regiment	9 July 1957	October 1957	
Captain František Neradil	1st Aviation Training Regiment	20 August 1957	?	doctor
Air defence advisory group				
Major General Vladimír Hlavatý	Air Force and State Air Defence Command	2 July 1957	1 December 1957	commander
Major Miloš Svoboda	Air Force and State Air Defence Command	19 July 1957	1 December 1957	navigation advisor
Major Rudolf Doležal	Air Force and State Air Defence Command	19 July 1957	1 December 1957	radar advisor
Captain Václav Štolba	Air Force and State Air Defence Command	19 July 1957	1 December 1957	anti-aircraft artillery advisor
Captain Emil Havlíček	Air Force and State Air Defence Command	19 July 1957	24 October 1957	communications advisor

Czechoslovak Air Force advisors Ján Labaj and Josef Mikloš, interpreter Jiří Šebánek and Egyptian pilot Fakhri standing in front of a MiG-17F at Kabrid air base in 1957. (Míťa Milota via Miroslav Irra)

Due to the illness of two Egyptians, 28 pilots completed the course which prepared them for air combat with MiG-17F fighters in elements during the day under VFR conditions at all altitudes. 'The course of the course was hampered by Egyptian pilots who do not like to be subjected to the disciplined and responsible fulfilment of tasks on the ground and in the air. By dismissing irresponsible pilots from the flight day, quite a good discipline was achieved by the end.'

The very good results of the course were marred by a traffic accident which cost the life of instructor pilot 1st Lieutenant Zdeněk Zelenka. On 15 September 1957, during the return from Ismailia to Kabrit, a passenger car used by the Czechoslovak instructors was smashed by a truck belonging to Canadian UN forces on the road running along the Suez Canal. While the driver died immediately, 1st Lieutenant Zelenka succumbed to his injuries four days later at Kabrit hospital. Interpreter Josef Lysoněk suffered injuries too, his collarbone was broken due to the accident.[3]

RESHAPING THE EGYPTIAN AIR DEFENCE

Although plagued by internal disputes, the aviation advisory team of Major General Jan Reindl left a lasting impression upon the top officers of the Egyptian Air Force in 1956. Indeed, it was Reindl who, before the start of the Suez War on his initiative and without prior approval from higher authorities in Czechoslovakia, worked out a proposal for the air defence of the Suez Canal.

In spring 1957, Egyptian military authorities requested the assistance of Czechoslovak military advisors in the rebuilding of their air defence forces. The Ministry of National Defence in Prague duly approved the demand from Cairo and corresponding Supplement No. 15 of Contract No. 155-A was signed. The task was assigned to Major General Vladimír Hlavatý, former commander of fighter aviation forces of the State Air Defence (*Protivzdušná obrana státu*). He visited Egypt for the first time from 3 to 21 May 1957 in a fact-finding mission. The information gained from his tour laid the foundation for the making of several proposals of the prospective organisation of Egyptian air defence. The Czechoslovak air defence advisory group under the leadership of Major General Vladimír Hlavatý commenced its activity in Cairo in July 1957 (its members are listed in Table 8, each officer had his interpreter). On 22 July, Major General Hlavatý and his team were introduced to the Minister of War Major General Abdel Hakim Amer. At the same time, the Egyptian minister was acquainted with Czechoslovak proposals for the reorganisation of local air defence forces that were prepared beforehand at the headquarters of the Air Force and State Air Defence Command (*Velitelství letectva a protivzdušné obrany státu*) at Prague. However, the approval of one of the plans for realisation had to be postponed due to disagreement between the Egyptian Air Force and the Egyptian Army commanders-in-chief since the latter did not want to transfer anti-aircraft artillery for the use within territorial air defence units of the Egyptian Air Force. Therefore, Amer decided to approve one of the proposals only upon the series of Czechoslovak theoretical lectures about air defence for the top Egyptian military officials.

The lectures were followed by discussions over the new organisation of Egyptian air defence and inspection of the existing operations rooms. Subsequently, Czechoslovak advisors provided lectures and training for their crews. At the same time, the operations rooms were furnished with additional equipment according to Czechoslovak recommendations. Moreover, the advisors surveyed Egypt's territory including the coast of the Mediterranean Sea, the Red Sea, Sinai, to find locations for the proper deployment of air defence radars. Thereafter, practical exercises with scrambles of alert

Major General Vladimir Hlavatý. (VÚA-SA AČR Olomouc via Milan Vyhlídal)

fighters and air defence cooperation training of the Egyptian Air Force with the Egyptian Army and Egyptian Navy were carried out.

During the next stage of their stay in Egypt, Czechoslovak officers worked out the definitive organisation of Egypt's air defence forces and the air defence plan together with proposals for further expansion up to 1960. The Soviet military and air attachés were consulted over the plan for the air defence of Egypt. On 13 October 1957, Czechoslovak advisors handed over to the Soviet Air Attaché Lieutenant Colonel Guryev all available information about Egyptian military aviation and anti-aircraft artillery, air bases, and their facilities together with their suitability for the air defence mission.

Three days later, Major General Hlavatý presented the air defence plan to Minister of War Amer who approved the concept. However, a discussion lasting three hours developed concerning the proposed separation of some anti-aircraft artillery units from the ranks of the Egyptian Army. In the end, Major General Hlavatý, supported by arguments from Soviet Military Attaché Colonel Nemchenko, persuaded Amer who approved the deployment of anti-aircraft artillery under the operational control of the Egyptian Air Force for the defence of Cairo, Alexandria, Ismailia, Suez, and Aswan Low Dam. During Amer's following visit to Moscow, the air defence plan was approved by Marshal Sergei Ignatevich Rudenko.

During the final stage of their stay, the Czechoslovak advisors prepared plans for the training of operations room crews, fighter aviation personnel, the cadre of the early warning service, anti-aircraft artillery officers, and communication equipment operators.

At that time, the main operations room was in a courthouse (Tribunal) in Cairo. Simultaneously, the underground central operations room was being finished in the rocks near Cairo Citadel. Sector operations rooms were established at Alexandria (north sector) and Ferdan (Suez Canal sector). It was planned to construct an additional operations room at Aswan (south sector) and a reserve operations room at Tanta. Operations rooms of fighter aviation were established at Kabrit, Almaza, Inshas, with the facility at Abu Suweir under construction. The combat shifts of the respective operations rooms, trained by Czechoslovak officers, were able to guide fighter airplanes towards single, high-speed aerial targets at medium altitudes under the conditions of a simple air situation. Shortcomings were observed within the ranks of the anti-aircraft artillery, such as a considerable number of armament and equipment, mostly radars and fire control directors, in unserviceable condition, mostly because of insufficient technical measures and organisation, and lack of communication equipment at operations rooms and artillery batteries. On the other hand, anti-aircraft gunners were trained well and Major General Hlavatý considered them as very courageous since they 'do not leave their combat post at any cost'.

As well as Czechoslovak and Soviet military instructors and advisors, Indian Air Force personnel trained Egyptian student pilots on Yak-11 aircraft and Indian professors lectured them on theory. Upon graduating from the Air Force College at Bilbeis, a new Egyptian pilot had some 180 to 200 flight hours under his belt.

According to the assessment of Major General Hlavatý:

> Pilots on jets are very brave. In most cases, courage is the only positive. Otherwise, they are largely undisciplined, pay little attention to the knowledge of the materiel, do not like to be subordinated to someone, and try to circumvent orders. These shortcomings are gradually being removed by our, Soviet, and Indian instructors.

Table 9: Deployment of Egyptian anti-aircraft artillery, autumn 1957[6]

Defended area	Number of batteries (guns)	Planned extension
Cairo	6 medium calibre batteries (41 vz. 44 guns) 2 small calibre batteries (33 30mm anti-aircraft guns) 2 small calibre batteries (24 M1939 guns)	10 medium calibre batteries (80 vz. 44 guns)
Alexandria	3 medium calibre batteries (16 vz. 44 guns) 2 small calibre batteries (24 anti-aircraft guns)	6 medium calibre batteries (24 vz. 44 guns)
Aswan Low Dam	1 small calibre battery (18 30mm anti-aircraft guns)	7 medium calibre batteries (28 vz. 44 guns) 9 small calibre batteries (54 M1939 guns) 18 vz. 53 quadruple anti-aircraft machine guns 12 vz. 38/46 anti-aircraft machine guns 15 balloons 20 fixed smoke generators 8 mobile smoke generators
Ismailia	without anti-aircraft artillery	6 medium calibre batteries (16 vz. 44 guns)
Suez	2 medium calibre batteries (16 vz. 44 guns)	8 medium calibre batteries (32 vz. 44 guns)
Port Said	1 medium calibre battery (8 vz. 44 guns)	

Table 10: Deployment of Egyptian radars, autumn 1957[7]	
Radar type	**Combat post**
P-8 radars, 1st line	Rosetta, Mansura, Qantara, Abu Suweir, Kabrit, Kom Ombo, Aswan
P-8 radars, 2nd line	Wadi Natrun, Inshas, Almaza
ESV2 radars	Agami, Kafr el Sheikh, Abu Sultan, Fayium II, Fayium III
planned deployment of P-8 radars	El Daba, Baltin, Dammieta, el Arish, Safaga, Hurghada
planned deployment of P-20 radars	Marsah Matruh, el Ehayla, Mansura, Abu Suweir, Maghara, Inshas, Teiriya, Kabrit, Almaza, Luxor, Aswan

> Many pilots are untouchable in the true sense of the word. They are the sons and relatives of senior political, military, religious functionaries, and rich men, the officer rank of whom is a visiting card into society. An officer's salary for many is only a contribution to clubs. Most officers have shops, workshops, little factories, farms, auto taxis, etc. These businesses are [their] main source of income.

The team of Major General Vladimír Hlavatý completed the mission successfully in November 1957 and the last of its members returned home in the early days of the next month.

Meanwhile, the planning for the establishment of the United Arab Republic (UAR), a political union between Egypt and Syria from 1 February 1958, was in full swing. Hence, a larger group of Egyptian officers left for Syria on 9 October to implement operations rooms and air defence system on Syrian territory according to the model designed for Egypt by Czechoslovak advisors.[5]

ADDITIONAL MILITARY TEAMS IN EGYPT

The HTS dispatched factory representative Jiří Hruška of Závody 9. října, the producer of JAWA motorcycles, to Egypt with the task of carrying out the training of Egyptian mechanics in maintenance and repairs of JAWA 350 typ 354/03 motorcycles operated by the Egyptian Army (ca 130 examples), the Egyptian Air Force (50), and the Egyptian Navy (70). For this reason, during August and September 1957, he visited the central repair establishments of each service that were deployed at Almaza (army), Cairo (air force), and Alexandria (navy) where he performed the instruction of local personnel.

During the stay in Egypt, Jiří Hruška repaired 12 JAWA 350 motorcycles. In his report, he stated:

> The general handling of riders with motorcycles is very rough, mainly the way of shifting with the full weight of the foot. It is driven so long until the motorcycle can move. Mostly, nobody cares that [the motorcycle] lacks the footrest, light is not working, [or] the loose and wired fender is knocking. The rider is forbidden and also usually cannot repair the most common things on the motorcycle, spark plug, contacts, carburettor. He is ordered, if the motorcycle stops, to transport it to the workshop.
>
> […] Roughly half of the motorcycles put into operation so far are taken out of service due to accident or malfunction that could not be repaired because spare components /1st part/ came to Egypt about 1/2 year after the delivery of motorcycles and only during my stay they were being unpacked from crates.[8]

On 1 September 1957, a technical group of aircraft technician Dobrovolský (commander), two aircraft mechanics (Krejčí and Cepek), and a test pilot (Kočíř) started the assembly of recently delivered Zlin Z-226 trainers, apparently at Bilbeis air base. Simultaneously, Czechoslovak personnel carried out practical training of Egyptian ground crews, 15 airframe and 15 engine mechanics, during the assembly. Although Egyptian mechanics boasted that some parts of the instruction are not needed since 'they

A Czechoslovak made Yak-11 training aircraft of the UARAF (as the Egyptian Air Force was officially titled from 1958 to 1972) in which Egyptian pilot Mahmoud Abbas Hilmi defected from el-Arish air base to Hatzor air base in Israel on 19 January 1964. (Moshe Pridan, Government Press Photo)

A vz. 51 multiple rocket launcher at a military parade in Cairo in July 1960. (via Martin Smisek)

know everything', the members of the Czechoslovak team could see their lack of even the most rudimentary knowledge. Up to 15 September, 14 Zlins were assembled and test flown. The 15th aircraft served as a source of spare parts for the completed airplanes since the crate with the relevant missing parts was not delivered in time.[9]

On 8 September 1957, a tank advisory team led by Captain Miroslav Říha and composed of 12 men, including the commander, arrived in Egypt with the task of implementing the correct operation, maintenance, ordinary repairs, and training on Czechoslovak-made T-34/85 and SD-100 vehicles at one selected armoured regiment near Cairo. The idea was to make a model unit from this regiment – the attained experience of its members was to be subsequently passed on to other armoured formations of the Egyptian Army. On 20 September, Captain Říha met General Mustafa, chief of the Egyptian armoured forces, to discuss the mission of his technical group. However, to Říha's great surprise, the Egyptian officer had no clue about the purpose of the stay of the Czechoslovak advisory team in Egypt. On 22 September, Czechoslovak advisors appeared at the unit – 4th Armoured Regiment at Camp Huckstep at Cairo. While several of them tried unsuccessfully to find teaching aids, the rest started with the technical inspection of local armoured vehicles. The latter activity was completed on 29 September. Although all tanks were in operational condition, they were showing signs of improper maintenance. The teaching aids were finally found after a five-day search.

Thus, the training of Egyptian soldiers could commence only on 5 October after the members of the advisory team installed the aids in several teaching rooms. In addition to technical topics, Czechoslovak instructors were tasked to carry out the instruction of tank recovery and tactical training up to the company level. The latter included tank in assault and defence, tank platoon in assault and defence, tactical exercise of a tank platoon with live firing, the march of a tank company and assault on the enemy, pursuit of the enemy and transit into defensive posture, and tactical exercise of a tank company with live firing. However, contrary to the original plan, Czechoslovak instructors were allowed to train only one company in the topics of tank in assault and tank platoon in assault.

The Egyptian crew of a vz. 51 monitoring the firing of their weapon during an exercise in the early 1960s. (Jens Heidel Collection)

According to the report of Czechoslovak Military Attaché Colonel Jaroslav Knébl:

> Over time, the trained company began to show improved training results. The leadership of the tank troops, which was initially influenced by a German advisor to our disadvantage, was convinced by the results of the correctness of our training methods. Later, the leadership regretted that it did not give the [Czechoslovak advisory] group really the entire regiment for training.

During the live firing exercises, the results of Egyptian tank crews were assessed as hardly satisfactory according to Czechoslovak standards. But, 'all onlooking officers rated the shooting results as excellent, the regimental commander said that the shooting results exceeded expectations and that such results have not yet been achieved in any unit'.

In the meantime, the members of the regiment underwent a driving course and technical training related to the operation of the main tank subassemblies – armament, engine, radio station, electrical equipment – and maintenance. These training sessions lasted until 28 January 1958. Upon his own experience, one of the Czechoslovak instructors observed that previous training of Egyptian armoured officers in Czechoslovakia was very theoretical and prepared them only little for practical service within a combat unit equipped with Czechoslovak armoured vehicles.[10]

Around the same time as the tank advisory group, a team of four Czechoslovak automobile technicians (one of them was the commander of the group Captain František Stejskal) was dispatched in Egypt to inspect all delivered Tatra 111 and Praga V3S trucks (the latter vehicles served mostly as the chassis for vz. 51 multiple rocket launchers). The group arrived on 18 August and its activity in Egypt started with a short-term course for technicians of units equipped with vz. 51 multiple rocket launchers at Almaza. The check of trucks was performed between 12 and 28 September in units at Almaza (V3S), Suez, Ismailia, and Port Said (Tatra 111). The vehicles were generally operational, but some of them needed small repairs. Technical knowledge of V3S trucks at the units that operated them was considered insufficient by Czechoslovak advisors. Moreover, some of their rocket launcher superstructures were found to be damaged by improper manipulation.

Thereafter, between 7 October and 15 December, the team members carried out training of 12 Egyptian technicians at an automobile training school in Cairo in repairs of Czechoslovak

trucks. Upon their return to Czechoslovakia, the instructors reported that the operation of Tatra 111 and Praga V3S trucks was suffering from poor maintenance and repairs because the vehicles were delivered without spare parts, proper tools, and respective manuals. The problem was further exacerbated by the lack of knowledge, mostly related to the maintenance, adjustment, and repairs of diesel engines, on the part of Egyptian military drivers and mechanics. Therefore, without the basic maintenance, the trucks were subjected to extreme wear and tear that resulted in their reduced service life. This situation, in turn, led to mistrust of Czechoslovak vehicles by Egyptian officials who started to prefer trucks from different manufacturers with better service support (such as GAZ from the Soviet Union or Mercedes-Benz from West Germany).[11]

HIGHER COURSE OF ARMAMENT

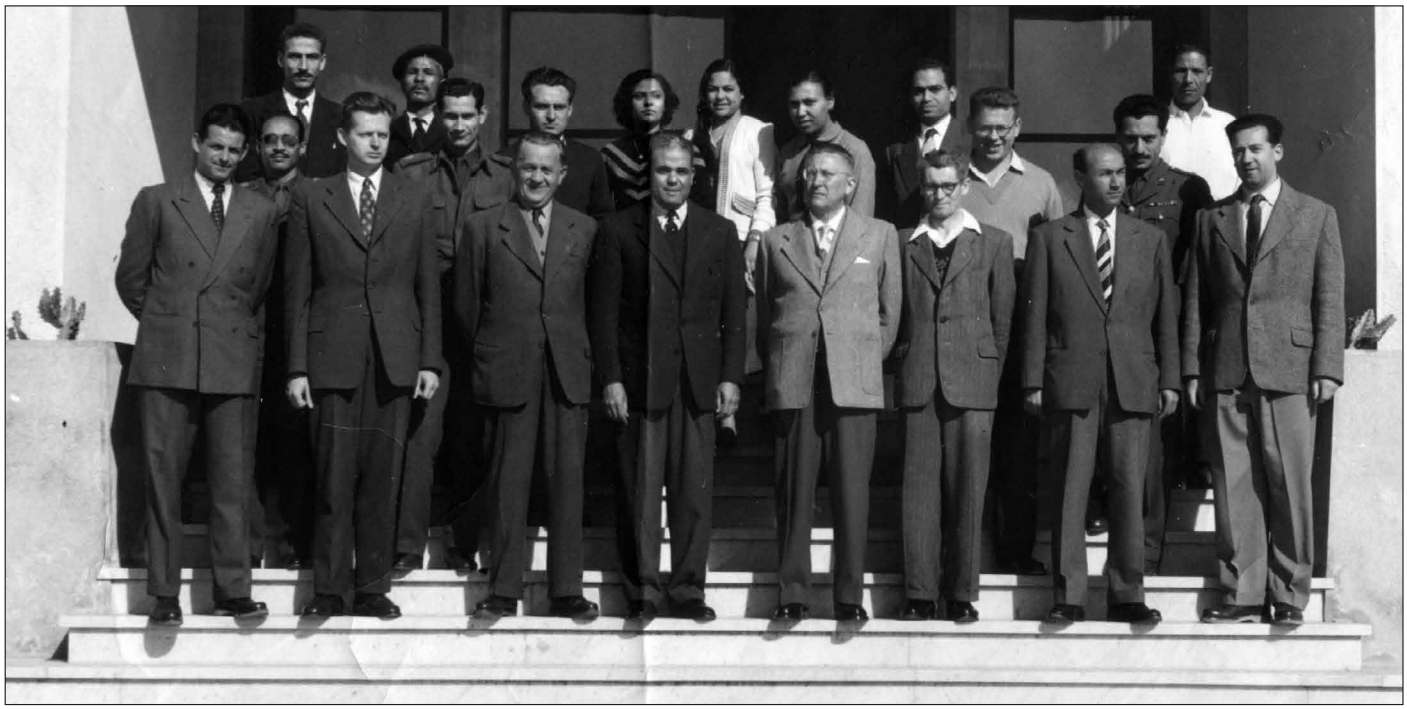
In 1955, Egyptian officials probed the possibility of Czechoslovak participation in leading specialised military-technical courses for university-educated Egyptian officers. Upon direct request of the Minister of Military Factories, General Hassan Ragab, the Czechoslovak Ministry of National Defence organised the Higher Course of Armament at Alexandria University for engineers from military plants and selected officers of the Egyptian Army. Professor Alois Farlík from the VTA AZ was appointed as the head of the course. From 9 to 15 August 1956, he led discussions with Egyptian officials related to the organisation of the course, taught subjects, and financial issues.

In great haste, the Higher Course of Armament commenced on 1 October 1956 and included the following subjects: external ballistics, internal ballistics, theory of weapons, design of ammunition, design of automatic weapons, design of artillery guns, chemistry of powders, internal ballistics of powders. The lecturers were members of the academic staff from the VTA AZ at Brno and experts from the armament design bureau Konstrukta at Brno and Trenčín. Since the Rector of Alexandria University could not guarantee the classification of the lectures and the secure storage of teaching materials and weapon specimens, he transferred, in agreement with the Ministry of Military Factories, the teaching

Professor Alois Farlík, the leading Czechoslovak expert at the University of Alexandria. (Viktor Kanický via Milan Vyhlídal)

to nearby Abukir, located in the Nile Delta. There was a very modern ammunition plant in this location and the local offices and laboratories were appropriate to be used for the Higher Course of Armament. Eventually, Abukir became the permanent workplace of the Czechoslovak team, and in the future, the advisors travelled to Alexandria only upon a meeting of the Scientific Council.

However, beginning teaching was very difficult due to the lack of suitable rooms and teaching aids, unfamiliarity of lecturing in English, and lack of prepared textbooks. At the beginning of the Suez War, professor Farlík's group was evacuated back to Czechoslovakia through Sudan together with other Czechoslovak military advisors deployed to Egypt at that time. Farlík and his team, strengthened by two more academics from the VTA AZ, returned to Alexandria in February 1957 and continued the unfinished work.[12]



Teachers and other staff of the Higher Course of Armament of Alexandria University, in April 1957. Professor Farlík is visible in the front row, in light jacket; Viktor Kanický in the middle row, third from the right (in a light sweater). (Viktor Kanický via Milan Vyhlídal)

The second term of the Higher Course of Armament commenced on 30 March 1957. The students attended lectures on the design and production of ammunition, explosives and fuses, external ballistics, technology of weapons, industry organisation, industry hygiene, and German language. While the first two subjects were taught by the Czechoslovak experts, the remaining lectures were led by Egyptian teachers. Simultaneously, two Czechoslovak interpreters translated Czechoslovak textbooks into English.

As of 31 December 1957, all students, with one exception due to illness, handed in their diploma projects related to the design of ammunition, small and medium calibre automatic weapons, and design of artillery guns. The content and the arrangement of submitted works were evaluated by professor Farlík as excellent. The emphasis was placed on the ability to produce the designed arms in domestic factories and the use of materials produced in the country or planned to be produced in the near future. 'The economic element in the design of armament material was especially emphasised.'

The Higher Course of Armament was completed on 15 January 1958 with the defence of diploma thesis and final exams. The examination committee consisted of Egyptian and Czechoslovak teachers. The exams were also observed by directors of Egyptian military factories, representatives of the Ministry of Military Factories, and senior military representatives who then had the opportunity to inspect displayed drawings and calculations.

In addition to the Higher Course of Armament, Czechoslovak experts staffed a specialised chemical course that took place at Abukir as well. However, unlike the former, this course led by Major František Janda was afflicted by regular interventions by the HTS, and organisational problems together with a lack of translators and properly qualified teachers.

Overall, the achievements of professor Farlík and his team greatly impressed Egyptian military officials and sparked their interest in the continuation of assistance in the field of military technical education. Indeed, in 1957, Farlík proposed the establishment of an independent university under the command of the Ministry of War and the Ministry of Military Factories since Alexandria University could not ensure the proper secrecy of arms research, nor secure the appropriate facilities. This idea materialised in the establishment of the Military College of Sciences in 1958, and Czechoslovakia played a crucial role in these developments.[13]

MILITARY ASSISTANCE CONTINUES

Between 5 and 18 June 1957, the Czechoslovak military delegation discussed future training requirements with the representatives of the Ministry of War in Cairo. The Czechoslovak officers visited selected units of the Egyptian Army to assess the conditions for the operation of the armament delivered from Czechoslovakia and the possibility for the organisation of additional training courses in Egypt. It was observed that, despite the numerous courses for Egyptian military personnel in Czechoslovakia and the activities of Czechoslovak instructors in Egypt, the leadership of the Egyptian Army was unable to spread the knowledge and know-how attained at these opportunities into all units. Moreover, some top-ranking Czechoslovak officers had their objections to the existing practice of military training:

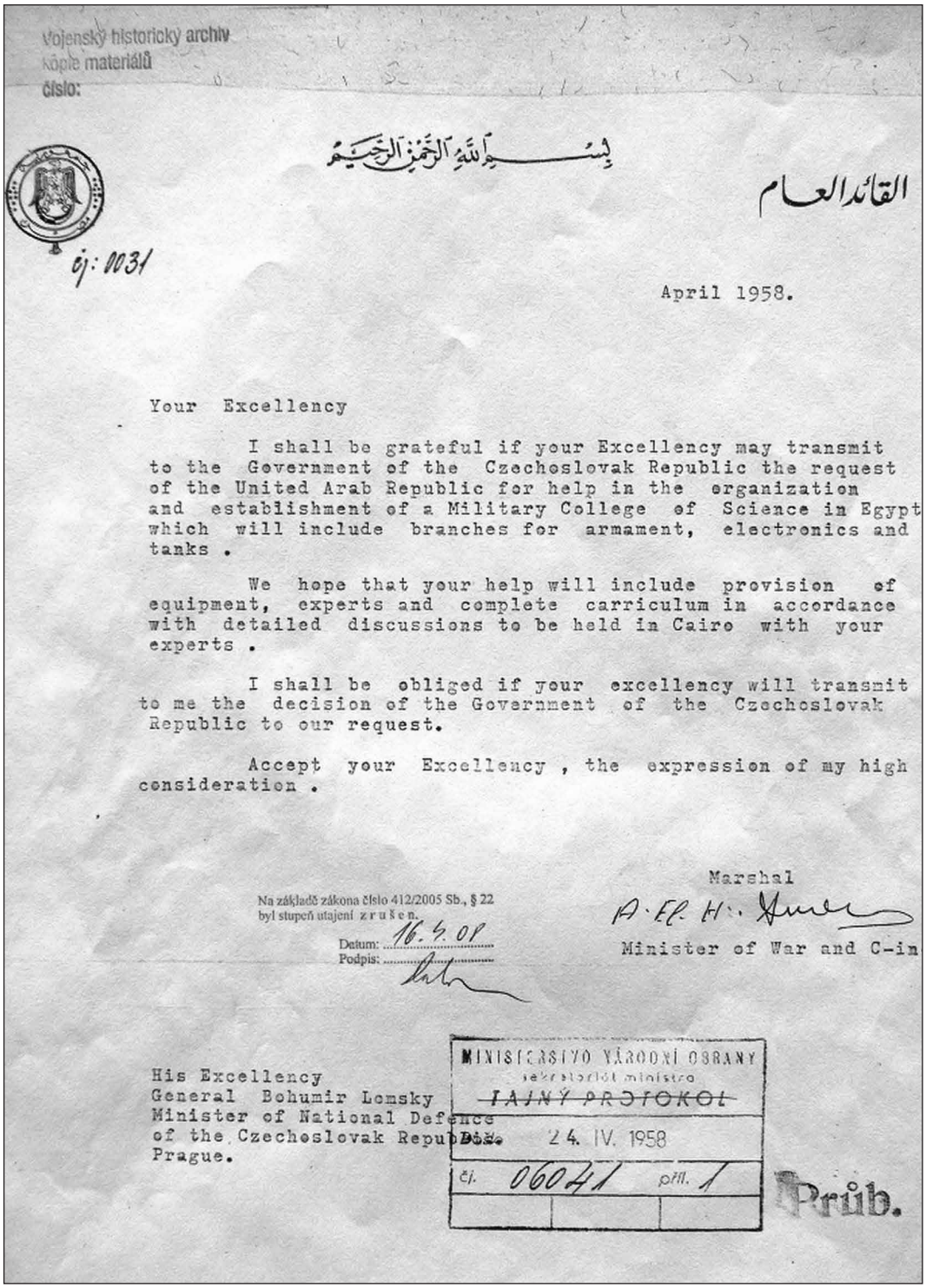
> I do not consider the current method of assisting the Egyptian Army as suitable, considering that short-term training of small groups of Egyptian experts in both the Czechoslovak Republic and Egypt cannot ensure proper use, maintenance, and repair of the materiel since trained officers in no way pass on the experience gained. At the same time, short-term requirements for sending a relatively large number of instructors abroad and training a significant number of groups in the Czechoslovak Republic disrupt the combat preparation of our units, lead to the disclosure of deployment, organisation, tactics, and the like.
>
> Proper improvement in the operation, maintenance, storage, and repair of supplied materiel can only be ensured by training soldiers at all levels on a large scale directly in Egypt in local terrain and climatic conditions.

During the negotiations, as well as traditional technical courses, Egyptian officials requested tactical training of regimental commanders and staff officers of divisions and army corps. While Czechoslovakia was obliged to carry out the former on the grounds of respective arms contracts, the provision for the latter had no foundations in previous agreements. Therefore, consultations with the General Staff of the Soviet Army were needed. Colonel General Nikolai Ivanovich Gusev, Deputy Chief of the Staff of Warsaw Pact Forces, advised on 5 September that Soviet military leadership approved the tactical training of Egyptian and Syrian officers up to the level of division and corps. Moreover, Prague was provided with training programs, according to which Egyptian and Syrian generals and senior officers were trained in the Soviet Union to maintain the unity of the training provided by the Czechoslovak People's Army and the Soviet Army. The Politburo ÚV KSČ duly approved additional military assistance for Egypt, including the tactical training, in its resolution on 10 September 1957.[14]

The activities of Czechoslovak instructors in Egypt continued with the tank repair course that took place from 5 February to 20 March 1958. The initial lesson was dedicated to the recovery of a stuck tank. Egyptian trainees gained theoretical and practical knowledge that enabled them to carry out repairs of tanks in the workshops of respective armoured regiments.[15]

The discussion related to the additional military assistance and training of the Egyptian and Syrian military personnel by Czechoslovak officers in the United Arab Republic culminated on 30 May 1958 when Contract No. 40-19-213 was signed in Prague. Contrary to original demands for 11 technical and 12 tactical courses, the Egyptian representatives scaled down their requirement to just one tactical and three technical courses. Czechoslovak officials assumed that this was a consequence of inadequate funds and the larger involvement of the Soviet Armed Forces in the instruction of Egyptian and Syrian troops. Analogous training of Egyptian and Syrian soldiers in Czechoslovak military establishments for the year 1958 (see Table 7) was ordered under Contract No. 40-17-213 which was signed in April 1958.[16]

The four military courses in Egypt commenced in summer 1958 and all were interrupted by the 1958 Lebanon crisis during which the trainees were recalled back to their parent units. After the break lasting some 40 days, the training was restarted in late August. The first to start was Course 501 – the training in recovery of automobiles and tanks – which began on 15 June 1958. The course was attended by 11 officers and 13 warrant officers. As instructors served Captain Jaroslav Kraus and Captain Václav Herian who were complemented by interpreter 1st Lieutenant František Hroník. The course was complicated by the poorly prepared syllabuses on the recovery of trucks because they took into account the use of the AV-3 recovery vehicle and the K-32 truck crane, none of which was ever delivered to the Egyptian Army. Thus, the instructors had no other option than to improvise and adapt the training to reality.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kópie materiálů
číslo:

بسم الله الرحمن الرحيم

القائد العام

čj: 0031

April 1958.

Your Excellency

I shall be grateful if your Excellency may transmit to the Government of the Czechoslovak Republic the request of the United Arab Republic for help in the organization and establishment of a Military College of Science in Egypt which will include branches for armament, electronics and tanks .

We hope that your help will include provision of equipment, experts and complete carriculum in accordance with detailed discussions to be held in Cairo with your experts .

I shall be obliged if your excellency will transmit to me the decision of the Government of the Czechoslovak Republic to our request.

Accept your Excellency , the expression of my high consideration .

Marshal
A. El H. Amer
Minister of War and C-in

Na základě zákona číslo 412/2005 Sb., § 22
byl stupeň utajení zrušen.
Datum: 16.4.08
Podpis:

His Excellency
General Bohumir Lomsky
Minister of National Defence
of the Czechoslovak Republic
Prague.

MINISTERSTVO NÁRODNÍ OBRANY
tajemství ministra
TAJNÝ PROTOKOL
Došlo 24. IV. 1958
čj. 06041 příl. 1
Prüb.

In April 1958, the Czechoslovak minister of national defence was approached by the Egyptian Minister of War, Field Marshal Amer, with a polite request for assistance in the construction of the Military College of Sciences. (VÚA-VHA Praha)

According to the original plan, only Czechoslovak-made trucks were to be used during the course. However, the Czechoslovak instructors were able to obtain only one example each of the Tatra 111 and Praga V3S, both of which had to be repaired by them since the vehicles were immobile. Initially, Captain Jaroslav Kraus was reluctant to use the US and British made trucks, which, according to his own words, would serve only as their promotion. In the end, however, he had no other choice since, on 20 September, even the Tatra and Praga trucks had to be returned to their original units. Therefore, mostly US, British, and Soviet vehicles were used during Course 501, such as Scammell and Diamond T recovery vehicles or K-51 and various Lorain truck cranes. A similar situation repeated itself in the case of armoured vehicles – in addition to a T-34 tank modified into an armoured recovery vehicle and one SPK-5 crane tank, a Sherman tank recovery vehicle was utilised as well. The training was completed to the satisfaction of Egyptian authorities on 4 November 1958.

The remaining two technical courses took place at Alexandria and were dedicated to the technical training, maintenance, repairs, and deployment of M1939 (Course 524) and vz. 44 anti-aircraft guns (Course 525). The latter course included instruction on the DJA-6 anti-aircraft rangefinder, PUAZO-4a fire control director, and SON-4 fire control radar as well. Course 524 commenced on 5 July 1958 and its participants were mostly anti-aircraft artillery battery commanders (21 officers from different units) complemented by five instructors of local air defence training school. The knowledge of the former was considered by Czechoslovak instructors (Major Miroslav Žítek and Captain Jaroslav Mls) as minimal to average. This situation was duly rectified during the training. The course was completed on 17 October with written and oral examination which showed that the trainees attained generally very good knowledge of the topic. The parallel-running Course 525 began on 5 July and was attended by 14 trainees, eight of which were anti-aircraft artillery battery commanders with the rest composed of Egyptian instructors. The Czechoslovak training team was consisted of four instructors (including commander Captain Ivan Foltín) and two interpreters.

The sole tactical training was intended for anti-aircraft artillery regiment commanders and bore Czechoslovak cover name Course 505. Its purpose was to teach the trainees to organise and control the combat activity of anti-aircraft artillery units equipped with vz. 44 anti-aircraft guns, PUAZO-4a fire control directors, SON-4 fire control radars and supported by P-8 early warning radars. Again, the teaching of three Czechoslovak instructors (supported by two interpreters) led by Major Stanislav Ovčačík took place in the air defence training school at Alexandria. Course 505, which was

attended by 31 officers, commenced on 21 June and lasted until December 1958.[17]

STAFF COURSES FOR THE UNITED ARAB REPUBLIC AIR FORCE

Upon training several batches of regular pilots of the Egyptian Air Force in 1956 and 1957, Czechoslovak advisors moved to train higher echelons of the newly created United Arab Republic Air Force (UARAF) in 1958 and 1959. The first was Course 526 for staff officers of units equivalent to Czechoslovak Air Force aviation regiments and divisions. The training commenced in the Air Force War Institute at Almaza on 29 November 1958 and covered topics such as army and air force tactics, operational art, air force logistics, communication, navigation, bombardment, air-to-air and air-to-ground gunnery, nuclear biological and chemical protection, electronic countermeasures, aerial photography, meteorology, and air traffic. The course lasted until 27 May 1959 and was attended by 16 senior officers: three majors, seven lieutenant colonels, and six colonels. The trainees achieved generally excellent results during the training and almost all were assessed as very competent by Czechoslovak advisors. The Czechoslovak advisory team led by Lieutenant Colonel Jan Faifer was composed of six instructors (Major Pavel Tasáry, Captain Otakar Drábek, Major Milan Pohlodek, Captain Jiří Kulíšek, Captain Milan Forst, and Captain Svatopluk Macoun). Although the UAR was the recipient of huge military assistance from Czechoslovakia and the Soviet Union, it did not prevent Nasser starting a harsh anti-communist campaign which experienced one of its peaks during 16 and 18 March 1959 in the form of organised mass rallies. Hence, for the reasons of safety, Military Attaché Colonel Jaroslav Knébl ordered all Czechoslovak military personnel to limit their movement on the streets of Cairo during this timeframe.[18]

The training of UARAF squadron leaders was ordered by Supplement No. 2 of Contract No. 40-19-213 on 3 February 1959. The undertaking received the Czechoslovak cover name Course 527 and began in earnest in the Air Force War Institute at Almaza on 15 March 1959. The team of Czechoslovak instructors was led by Lieutenant Colonel Vladimír Vella. From 22 trainees with he ranks ranks of captain and major, were six Syrian. All were active pilots of fighter (15), bomber (2), and transport aircraft (5). The trained officers were squadron commanders, deputy squadron commanders, or instructors from the Air Force College. While four of the Egyptian pilots were graduates of military courses in Czechoslovakia, some Syrians had attended training in the Soviet Union previously. One of the Czechoslovak interpreters described the situation at the beginning of the course as follows:

> The students' level of knowledge of both tactical and general is relatively low. The equations and trigonometry make great problems to the great majority of them, as well as the basic operations of algebra such as dividing decimal numbers. They work with maps for the first time in their lives. It was a big problem at all to get maps for all students, another problem was to glue them together and finally to draw the situation with military symbols onto them. However, they managed to cope with these initial difficulties during the first two exercises and they had learned a lot. Among the students, there are also a few really diligent and competent to whom this course gives a lot.

The course went flawlessly until July when the Czechoslovak military attaché lost patience with two interpreters who were sent home prematurely on 25 July and 2 August respectively. Captain Maceška was dismissed due to his womanising, having intercourse with a Greek and an Italian, excessive drinking of alcoholic beverages, and boastfulness, and Captain Devanský had intercourse with an Italian and disobeyed some orders. Course 527 was completed on 20 October 1959 according to the original syllabus. Therefore, 21 graduates (one officer was dismissed due to his neglect of the course) were acquainted with the squadron combat tactics and received fundamental knowledge about the preparation and execution of ground units' combat activity, navigation, bombing, gunnery, air force logistics, communication, meteorological service, electronic countermeasures, and principles of protection from weapons of mass destruction.[19]

REPAIRS OF YAK-11S

During summer 1958, Egyptian representatives issued a request for the training of UARAF aircraft mechanics and technicians in the maintenance and repair of Yak-11 trainers. The corresponding deal with the Ministry of Foreign Trade and its HTS was signed on 13 June 1959 as Supplement No. 1 of Contract No. 40-64-213. Under the Czechoslovak cover name Course 545, a group of three Czechoslovak technicians led by Lieutenant Colonel Ján Knapp, all from the Aircraft Repair Plant Trenčín (*Letecké opravny Trenčín*), arrived in Egypt on 24 June 1959 with the task of carrying out 300 flight hours inspections (medium overhaul) and instructing local personnel in doing the same on Yak-11 airplanes operated by the Air Force College at Bilbeis.

The Czechoslovak team, supplemented by interpreter Major Evžen Procházka, commenced the work on 29 June. Contrary to the terms of the contract, the UARAF provided not only inadequate room for the overhauls but a lower number of poorly skilled ground crews as well. Instead of 37 qualified mechanics, only 15 to 20 were assigned to the task. Typical was a lack of common tools, specialised repair equipment was non-existent. At that time, the Air Force College operated some 54 Yak-11 trainers, 45 of which were put out of operation due to the number of flight hours. Up to the end of July, Czechoslovak technicians established several workshops and testing rooms for aggregates and radio stations. Simultaneously, the first four Yaks were in the process of overhaul, while an additional four trainers were being dismantled.

Upon the intervention of Lieutenant Colonel Arif, the situation of the Czechoslovak team improved sharply, sufficient properly skilled personnel were assigned for the task. Thus, 46 Egyptian technicians and mechanics took part in the overhaul of Yak-11s in August. However, the lack of tools persisted. During August, Czechoslovak technicians carried out an inspection of the central aviation depot at Khanka to find spare parts for Yak-11 trainers. Components found were subsequently transferred to Bilbeis to be used for the medium overhaul of some 30 to 35 aircraft.

The accommodation of Czechoslovak technicians was still poor with their quarters infested by bedbugs and fleas. This was one of the reasons that they worked hard to complete the mission as soon as possible. However, their activities were slowed down by the shortage of paints which were to be delivered from Czechoslovakia. Therefore, available paints of US origin had to be used instead, and this brought its complications.

In October, 10 days after a Yak-11 was sprayed with US colours and handed back to the Air Force College, it was found that its canvas skin was cracking and showing minimal strength. Although Lieutenant Colonel Knapp demanded chemical analysis of the skin and paints, his request was turned down. However, he continued

the investigation on his own and discovered that the problem lay in a thinner that contained damaging acids. All canvas surfaces of the aircraft in question had to be completely changed for new. Another Yak-11 freshly overhauled by the Czechoslovak team was destroyed during the same month when it was hit during taxiing on the runway by another Yak-11 that was just landing. An additional two airplanes of the same type were damaged in October due to the mistakes of local air traffic control and pilot error. Egyptian officials wanted the Czechoslovak team to repair both Yaks. However, this was flatly turned down since both airplanes needed the general overhaul and the scope of such repairs was not a part of the contract.

Finally, in November, the paints from Czechoslovakia were delivered to Egypt. In the meantime, Czechoslovak technicians performed overhauls which were coupled with the instruction and familiarisation of Egyptian personnel. Up to the end of Course 454, 48 Egyptian technicians and mechanics underwent the training. An additional 20 mechanics were temporarily assigned to the course by their qualifications. Thus, the UARAF was able to carry out medium overhauls of Yak-11 trainers independently without external assistance.

Repairing of instruments, together with repairs and testing of tanks, was made at Almaza workshops since there were no suitable rooms and testing equipment for this work at Bilbeis. For this purpose, Czechoslovak experts gave due instructions to workers at Almaza. New propellers were manufactured at Helwan Workshops and new engines were replaced there as well. At Bilbeis, Czechoslovak technicians organised an assembly workshop, tinsmith workshop, welding workshop, fabric workshop, a workshop for repairs of accessories, actuating cylinders, and undercarriage, a workshop for repairs of communication equipment, and a spare parts store. Testing equipment for all these workshops, imported from Czechoslovakia for this purpose, was put into service and the workers had been acquainted with it. Up to the end of the course on 10 December 1959, the Czechoslovak team completed the medium overhaul of 10 Yak-11s and a further six airplanes were in different stages of the same. Moreover, the damaged wing and engine cowling of one Yak-11 were repaired as well.[20]

MILITARY REPAIR PLANTS

In mid-1956, Egyptian representatives of the Ministry of War held discussions with the officials of the Czechoslovak HTS related to the establishment of military plants for the repairs of the armament delivered to Egypt from Czechoslovakia and the Soviet Union. According to the Egyptian request, Czechoslovakia should work out technical projects for related installations, deliver corresponding manufacturing and repair machinery, and provide assistance in the form of training of Egyptian workers and dispatching advisors to Egypt. Based on the negotiations, it was verbally agreed between Prague and Moscow that Czechoslovakia would take over the delivery of six types of repair plants, while the Soviet Union would deliver two other types. Also, it was agreed that the Soviets would provide all assistance based on specific Czechoslovak requirements.

These developments culminated on 22 May 1957 when the HTS and the Ministry of War signed a general contract for the delivery of six military repair plants to the overall value of 3 million GBP (62 million CSK). The TOS Kuřim factory and Projekta Praha design institute were appointed as the main contractor and general designer respectively. In the case of the ammunition maintenance facility and armament repair plant, the Military Design Institute assumed the role of the general design authority. Due to the subsequent reorganisations of Czechoslovak industry, the role of the main supplier for most plants was handed over to Investroj Praha and then finally to Odbyt strojů a nářadí (for more details see Table 11).

However, this was just a small piece in the row of different complications. The Ministry of War in Cairo changed the requirements several times which meant repeated reworking of technical projects. Contrary to the previous oral agreements with the Soviets, Moscow declined to provide complete assistance according to Czechoslovak requirements, mostly in the delivery of specialist repair and testing equipment that had to be procured from other Warsaw Pact countries (primarily in Poland). Moreover, Czechoslovak institutions had absolutely no prior experience in the design and all-embracing construction of the extensive military repair plants no matter if for the foreign customer or the Ministry of National Defence at home. This all led to massive delays.

Indeed, according to the original timetable, the end of all deliveries from Czechoslovakia was to be completed in 1958. However, as of 1 February 1960, only the contract for the establishment of the ammunition maintenance facility had been awarded. Although, at that time, the Egyptians were not able to approve Czechoslovak technical projects, they demanded that all military repair plants must be in running order by the end of 1962.[21]

Table 11: Military repair plants for the United Arab Republic (Egyptian territory)[23]

Installation	Czechoslovak cover name	Contract	Czechoslovak main contractor
automobile repair plant	Operation 8513	No. 657/5	Odbyt strojů a nářadí
central aircraft repair plant	Operation 8514	No. 657/8	Odbyt strojů a nářadí
armament repair plant	Operation 8515	No. 657/3	Závody Jana Švermy
tank repair plant	Operation 8516	No. 657/7	Odbyt strojů a nářadí
communication equipment repair plant	Operation 8518	No. 657/4	Tesla Pardubice
ammunition maintenance facility	Operation 8519	No. 657/1	Odbyt strojů a nářadí
division level aircraft repair plant (MiG-15 and MiG-17)	Operation 8521	probably not implemented	Odbyt strojů a nářadí
division level aircraft repair plant (Yak-11, Z-226, L-60)	Operation 8522	probably not implemented	Odbyt strojů a nářadí
division level aircraft repair plant (Il-14, Mi-1, Mi-4)	Operation 8523	probably not implemented	Odbyt strojů a nářadí
division level aircraft repair plant (Il-28)	Operation 8524	probably not implemented	Odbyt strojů a nářadí

During the negotiations in 1960, Egyptian representatives described the Czechoslovak offer for the establishment of aircraft repair plants as unsatisfactory and informed their Czechoslovak counterparts that they would seek the delivery of these facilities in other countries. Indeed, they held several negotiations in the Soviet Union and even West Germany. However, their activities proved to be unproductive. Hence, the Egyptians returned to Czechoslovakia and accepted the proposal of the company Odbyt strojů a nářadí.[22]

Meanwhile, various Czechoslovak military and industry institutions carried out training for the staff of the ammunition maintenance facility under code names Course 169 (chief of ammunition plant) and Course 170 (chief of maintenance plant, chemical laboratory, and testing laboratory of shooting). The training of 14 Egyptian and three Syrian officers commenced at the Antonín Zápotocký Military Academy (*Vojenská akademie Antonína Zápotockého*, VAAZ, the successor of the VTA AZ from August 1958) around early spring 1959. In addition to Czechoslovak lecturers, several Soviet experts taught lessons on Soviet ammunition. Following the theoretical portion at Brno, the trainees were moved to the 51st Artillery Base (*51. dělostřelecká základna*) at Nováky for the practical instruction in the maintenance, repairs, and dismantling of ammunition that started on 1 June. Again, three Soviet specialists were present to provide practical training related to the Soviet types of ammunition. Practical instruction then continued in the facilities of Adamovské strojírny at Dubnica nad Váhom and Synthesia at Semtín, Czechoslovak manufacturers of ammunition and explosives respectively.[24]

These two courses were complemented by two additional training sessions with code names Course 171 (training of ammunition inspectors, originally subdivided into Course 171a for Egyptians and Course 171b for Syrians, only the former for eight Egyptians materialised) and Course 181 (training of 12 experts for ammunition maintenance plants). Both undertakings were organised at the VAAZ (theory) and the 51st Artillery Base (practical portion). While the former was realised from 18 January 1960 to 23 July 1960, the latter took place between 12 October 1959 and 26 April 1960. The training was focused on artillery and engineer ammunition and was supported by two experts from the Soviet Union who provided lectures on Soviet types of ammunition.

The trainees of Course 171a had their stay in Czechoslovakia livened up by a fight with local citizens in the wine bar of the Hotel Blaník at Handlová around 2:00 a.m. on 1 May 1960. The incident was provoked by a local thug who had previously been punished six times for brawling. However, a more serious accident took place during the final examination at the pyrotechnical exercise area of the Artillery-Technical Training School (*Dělostřelecko-technické učiliště*) at Súčany on 23 July 1960 where one trainee, due to his own mistake suffered open fractures of both legs as the result of the explosion of a brass cartridge case for a vz. 31/37 gun. Overall, Course 171a was considered as successful, except for the frequent change of Czechoslovak instructors, some of whom had very low expertise and pedagogical skills.[25]

THE ESTABLISHMENT OF THE MILITARY COLLEGE OF SCIENCES

The idea to establish a new military-technical university had been brewing for some time in the heads of several Egyptian top military officials. The new institution was to serve as a means to provide the Egyptian Armed Forces with highly skilled professionals capable of developing arms and able to secure proper technical support for military units equipped with modern armaments. The plan was further bolstered by the activities of Czechoslovak academics led by professor Farlík during 1956 and 1958.

Thus, the new institution, named the Military College for Sciences (MCS), was established in 1958 and occupied Abd El-Rehiem Sabry Palace in Dokky, Cairo. One of the reasons that the seat of the college was placed in Egypt's capital was the considerable concentration of military factories in the area of Cairo. The Egyptians originally wanted to request assistance in the establishment of the MCS from the Soviet Union. However, in the end, they gave preference to Czechoslovakia precisely because of the success of Farlík's course.

The Ministry of War was swiftly seeking help in Prague. During negotiations with the HTS director Major General František Macek in Egypt in April 1958, a personal letter from Marshal Amer for Minister of National Defence Colonel General Bohumír Lomský, containing the official request for assistance in setting up a military college, was handed to him. On 8 May, a corresponding negotiation between HTS officials, including Professor Farlík, and the Egyptian delegation of Chief of the General Staff of the United Arab Republic Armed Forces, Colonel General Ibrahim, took place in Prague. The Politburo ÚV KSČ approved the scheme on 30 June 1958. Deputy Chief of the Antonín Zápotocký Military Academy Major General Josef Zuska became responsible for the preparation of Czechoslovak technical assistance in the establishment of the MCS. At the same time, he was named the first commander of the advisory team for the new military college.

In September 1958, negotiations with the first commander of the MCS, Brigadier Mohamed Ibrahim Hassan Selim, and Mohamed Hassan Tolba from the Training Department, General Staff of the United Arab Republic Armed Forces took place at the VAAZ in Brno. Major General Zuska noticed Egyptian ignorance of school issues and highlighted the efforts of the Egyptian delegation to 'exploit as much as possible from the VAAZ, as cheaply as possible, particularly concerning the intellectual property'. The outcome of a demanding meeting on 28 September 1958 resulted in the Technical Protocol, which became the basis for a future agreement between Czechoslovakia and the UAR.

The corresponding Contract No. 40-66-32 was signed by the HTS deputy director Miloš Hašek and Military Attaché Colonel Ismail Farid on 20 January 1959. Under this, the VAAZ was tasked to assist in the establishment of the MCS for the school year 1958/1959 in specialisations such as guns and infantry weapons, ammunition and rockets, tanks, vehicles, airframes, aircraft engines, aircraft armament, aircraft electric and special equipment, radars, and communication equipment. This was the first step that initiated Czechoslovak assistance for the Egyptian military university education system, and which continued uninterrupted for almost the subsequent 20 years.

Meanwhile, in late October 1958, an eight-member Czechoslovak delegation, composed of members of the VAAZ, the Ministry of National Defence, and the HTS, under the leadership of Major General Zuska flew to Cairo. Again, they were met by the chaos of Egyptian demands for military assistance. On the other hand, the undertaking elicited only a lukewarm reaction from the officials of the HTS who apparently did not see too much profit for Czechoslovakia in the establishment of the MCS. Following countless negotiations with their Egyptian counterparts, the Czechoslovak military delegation returned to Prague on 14 December 1958.[26]

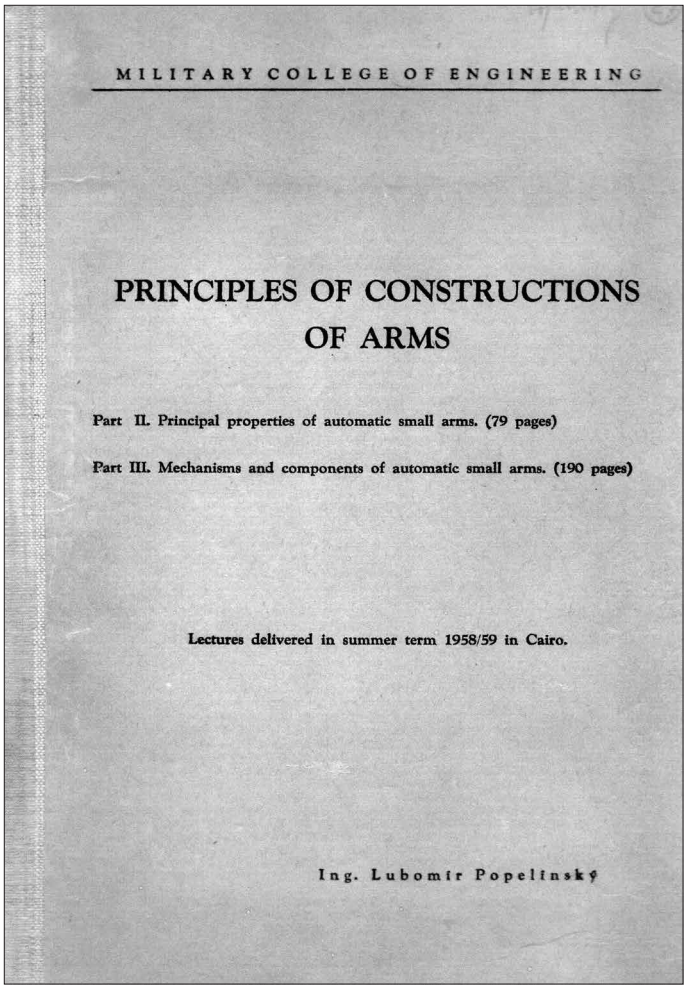
First leader of the Czechoslovak expert team at the MTC, Major General Josef Zuska. (VÚA-SA AČR Olomouc via Milan Vyhlídal)

THE TEAM OF GENERAL ZUSKA AT THE MILITARY TECHNICAL COLLEGE

Thus, the stage was set for the arrival of the first Czechoslovak advisory team on 14 February 1959 and the subsequent start of the teaching at the MCS. Under the leadership of Major General Josef Zuska, the team was composed of eight university lecturers, two administrative workers, and four interpreters. The initial cadre of students was divided into two small groups – the first made up of students from Cairo University and the second comprising half graduates with technical education. The Military College for Sciences was renamed to the Military Technical College (MTC) according to the reorganisation instructions issued on 7 September 1959. The first commander of the MTC became Brigadier Mohamed Ibrahim Hassan Selim who received a Master of Science in electrical engineering at Alexandria University in 1958. On 15 September 1959, a large press conference took place to promote the newly established institution and to bring it into the public eye.

An additional group of Czechoslovak teachers and laboratory technicians arrived in Egypt and, on 3 October 1959, commenced schooling of 35 half graduate students in specialisations in artillery weapons, ammunition, and rockets. One month later, Czechoslovak advisors began with lectures for some 150 students, mostly officers of the United Arab Republic Armed Forces and secondary school graduates in specialisations ordered under Contract No. 40-66-32. The teaching at the MTC was conducted strictly in English, which placed great strains on Czechoslovak personnel that generally had little knowledge of the language. On top of that, the Egyptians were unwilling to pay for a larger number of interpreters. As in other spheres of the Czechoslovak military assistance to Egypt, the Soviets were properly informed of all relevant developments. Indeed, Major General Josef Zuska personally met the chief of Soviet military advisors deployed to Egypt on 7 October 1959.[27]

Czechoslovakia provided not just teachers, the concept of teaching, study plans, and teaching materials for the fledgling MTC: the Military Design Institute was tasked to design new buildings


MILITARY COLLEGE OF ENGINEERING

PRINCIPLES OF CONSTRUCTIONS OF ARMS

Part II. Principal properties of automatic small arms. (79 pages)

Part III. Mechanisms and components of automatic small arms. (190 pages)

Lectures delivered in summer term 1958/59 in Cairo.

Ing. Lubomír Popelínský

Czechoslovak experts working in Egypt authored numerous military manuals. (Lubomír Popelínský via Milan Vyhlídal)

comprising lecture rooms, offices, laboratories, administrative rooms, and residence halls for the accommodation of students. For this reason, military architects Lieutenant Colonel Borovička and Miroslav Mužík visited the MTC in early 1960 to discuss their project with the college's top officials. During the summer of the same year, the MTC was temporarily moved to the extensive buildings formerly used by the British Army at Heliopolis. This enabled an expansion of the number of students, and thus the number of Czechoslovak experts in the school year 1960/1961.

According to Supplement No. 1 of Contract 40-66-32 signed on 16 December 1959, the VAAZ was tasked to provide two teachers of tactics and technical support for all branches of the armed forces. However, Chief of the VAAZ Colonel General Václav Kratochvíl was reluctant to fully comply with this requirement. One reason was to not give information related to the latest Czechoslovak (i.e. Soviet) military tactics, mostly in terms of weapons of mass destruction. There were other reasons besides:

> The whole army of the country 105 is led by a certain, specific concept of tactics, so I assume that it is necessary for their school to teach in this spirit as well. Therefore, it would be correct that the teaching of the tactics [at the MTC] would be secured by the command of the armed forces of the country 105 independently, as it has its own college for staff officers training.

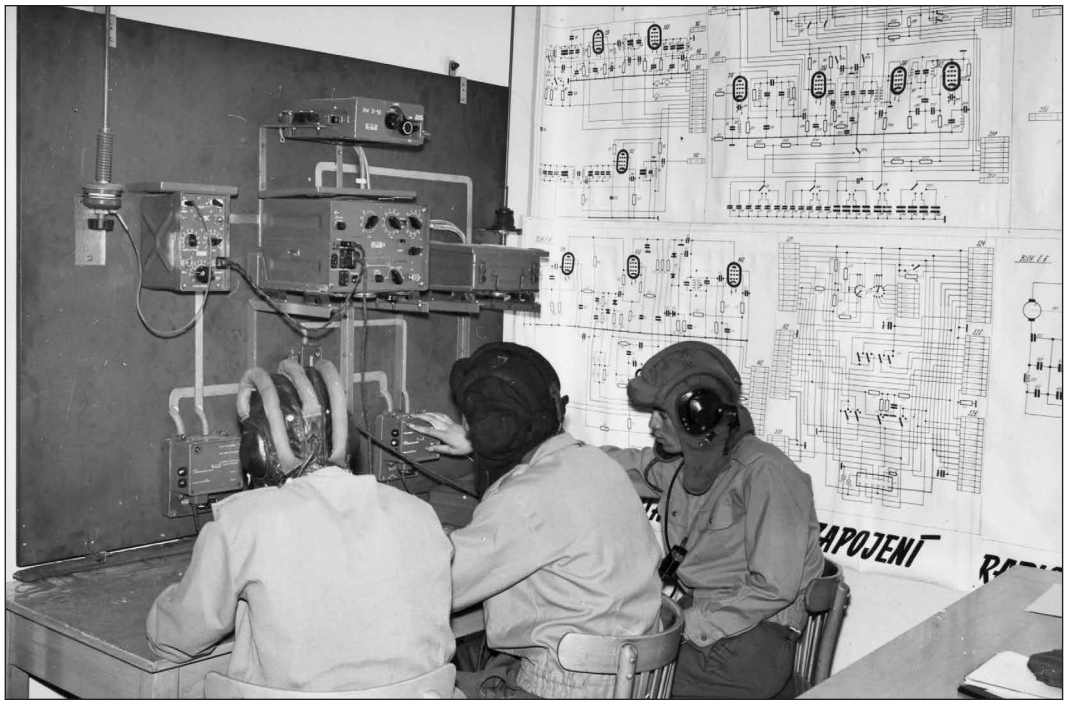
Despite his good job in Egypt, Major General Zuska was recalled to Czechoslovakia prematurely. Like Major General Reindl before him, he had strained relations with military attaché Colonel Jaroslav

Professor Ladislav Kovařík with his students at the MTC in Cairo in 1962. (Univerzita obrany via Milan Vyhlídal)

Knébl. Moreover, the Intelligence Directorate of the General Staff (*Zpravodajská správa Generálního štábu*) reportedly had information about the interest of Western intelligence services and their efforts to penetrate not only the Czechoslovak embassy but also a group of Czechoslovak advisors at the MTC. Allegedly, there was to be a particular interest in establishing contact with Major General Zuska, who was himself a former intelligence officer with experience in the Czechoslovak Army before the Second World War. Feeling that there could be some risk if he stayed further in Egypt, Minister of National Defence Colonel General Lomský ordered his withdrawal under the pretext that his presence at an essential meeting in Prague was needed on 15 April 1960. The Egyptian counterparts received the story that Zuska's abrupt return was caused by his poor health.

Colonel Osvald Vašíček was named as the new commander of the Czechoslovak advisory group at the MTC. In terms of Czechoslovak intelligence operations, he had one important benefit. Unlike his predecessor, he was recruited by the Intelligence Directorate under the code name Locator. Thanks to his activities, the Czechoslovak People's Army obtained plans of Egypt's military objects and a good overview of local military factories. On the other hand, his spy activities were severely limited by his insufficient knowledge of the English language – he was fully dependent on his interpreter during conversations with Egyptians. Moreover, due to his hasty withdrawal, Major General Zuska had no time to properly hand over the post of the chief of the Czechoslovak advisory team at the MTC to Colonel Vašíček which caused some complications. Additional inconvenience was caused by Vašíček's arrogance which meant that he was not very popular among Czechoslovak teachers and Egyptian officers alike.[28]

The Foreign Faculty of the VAAZ became a special training facility for a number of military students from all around the world, including these Vietnamese trainees. (Univerzita obrany via Milan Vyhlídal)



A foreign tank crew undergoing training at the VAAZ. (Univerzita obrany via Milan Vyhlídal)

STUDIES AT THE VAAZ

Parallel to the activities of the Czechoslovak teachers at the MTC, Egyptian civilians and military officers alike were sent to the VAAZ in Brno to raise their expertise, experience, and level of education. In several cases, the intention was to prepare future teachers for the MTC. However, the approval for these undertakings from the highest Czechoslovak political places was needed. The Politburo ÚV KSČ duly approved these schemes on 30 June 1958 in the same resolution in which Czechoslovak assistance in the establishment of the Egyptian military college – the future MTC – was granted.

The study of the first Egyptians at the VAAZ was authorised directly by President Antonín Novotný and commenced on 1 September 1958. While Lieutenant Colonels Wahib Hussein Adham and Kamal Nassar attended a Ph.D. study program (or more precisely the Czechoslovak equivalent CSc. – Candidate of Sciences), Majors Awad Mokhtar Hallouda, Medhat Mohamed Moustafa, and Mohamed Sidki Bakr (all three were graduates of the Higher Course of Armament led by Czechoslovak experts) arrived in Brno to achieve master's degrees in specialisations in sights, ammunition, and design of guns respectively. These officers were accompanied by two civilian engineers that attended specialisation study in the subjects of infantry and artillery ammunition (Ahmed Fouad Ismail) and ballistics, shooting range equipment and operation (Moustafa El Husseiny). The schooling of Egyptians at the VAAZ was ordered under Contract No. 40-17-213 and its supplements. It took 1 1/2 to 2 years and was separated from the standard study programs of the Czechoslovak students at the VAAZ.

This initial cadre was complemented during the next year with Major Fuad Helmi El Samah (tanks), Captain Faruk Ahmed Hafez (infantry weapons), and Captain Abd El Azim Mahmoud Sherif (infantry and artillery ammunition), all graduates of professor Farlík's course at Alexandria University. Their studies at Brno started on 1 November 1959. Again, as in the previous instances, their teaching was undertaken in the English language with the assistance of interpreters. Meanwhile, on 21 February 1959, Colonel Adham and Major Nassar received their doctors' degrees 'Candidate of Technical Sciences'. They were followed by Medhat Mohamed Moustafa, Ahmed Fouad Ismail, and Moustafa El Husseiny who graduated from the VAAZ with masters' degrees and completed the study on 10 February 1960.

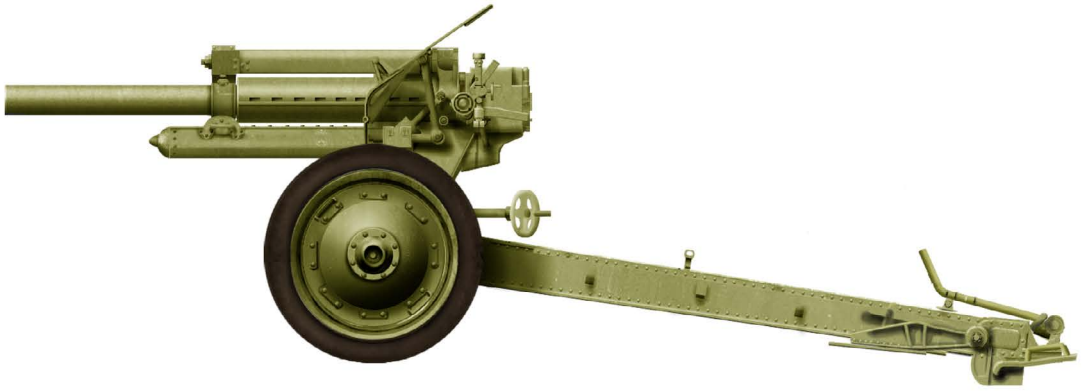
The study by Egyptians at the VAAZ immediately came under the scrutiny of the Military Counterintelligence (*Vojenská kotrarozvědka*, VKR) in relation to the breaching of military secrecy. The VKR officers observed: 'For example, Arab engineers have their own offices at the faculties, they move freely around the building, enter the teachers' offices at any time, get to know the organisation of departments perfectly during their long stay at the VA-AZ, and they have practically the opportunity to see such materiel that was not supplied by our state to the UAR.' The latter was the case of the latest T-54A medium tank, the Czechoslovak series production of which started in 1958.

Apparently, the VKR managed to recruit one of the Egyptians as an informer who, in October 1959, pointed to the presence of intelligence officers in the ranks of the Egyptian students. From their own surveillance, the VKR officers suspected Mohamed Sidki Bakr of conducting intelligence activity. For these reasons, the teaching of Egyptian students was shifted out of the VAAZ facilities to a villa in Lužická 9 in Brno. However, this was only a stopgap measure. The definitive solution was the creation of the Foreign Faculty of the Antonín Zápotocký Military Academy (*Zahraniční fakulta Vojenské akademie Antonína Zápotockého*, ZF VAAZ), established in August 1960 specifically for the studies by military personnel from developing countries of Asia, Africa, and Latin America.[29]

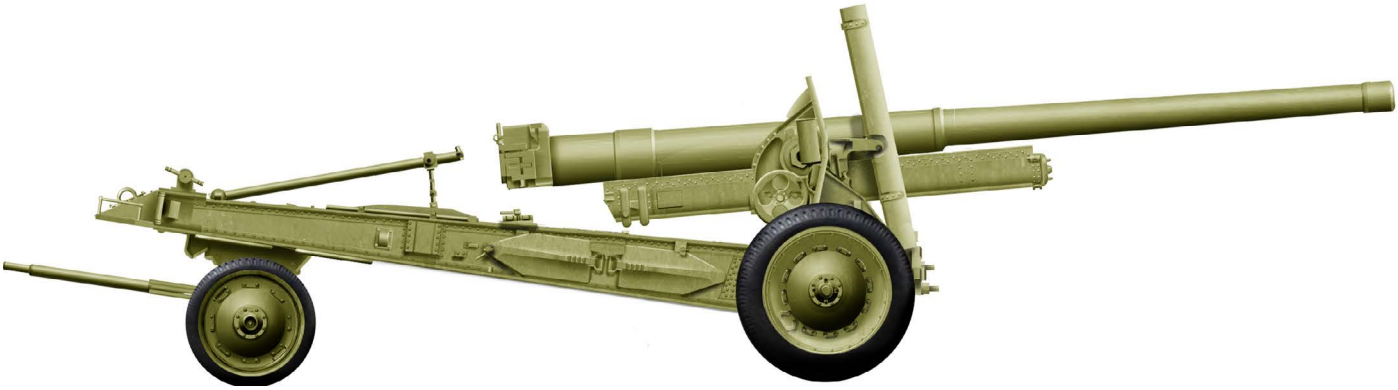
AIR FORCE STAFF COURSE

In autumn 1959, the Egyptian military attaché in Prague requested the repetition of training for the UARAF staff officers that was organised in Egypt for the first time under the code name Course 526. This demand was duly approved by Czechoslovak authorities and the corresponding deal was awarded as Supplement No. 2 of Contract No. 40-64-213 on 1 February 1960. The Egyptians demanded the presence of the same Czechoslovak advisors as in 1958 and 1959.

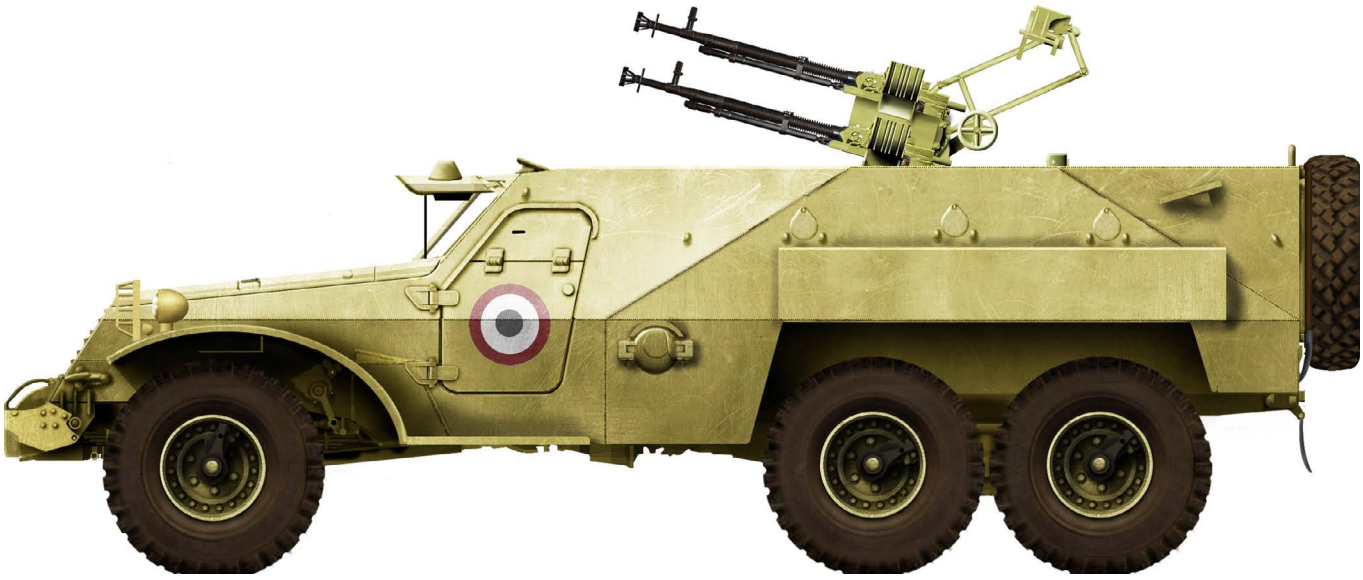
Therefore, Lieutenant Colonel Jan Faifer with his team of instructors and interpreters was dispatched to Egypt in late February and early March. The undertaking with the Czechoslovak cover designation Course 555 took place at the Air Force War Institute in Almaza air base from 12 March 1960. The training was attended by 26 officers in the ranks ranging from major to brigadier. Many of them were already graduates of various training courses in Czechoslovakia. As stated in one of the reports: 'During preparation for teaching, both teachers and interpreters focus to be perfectly prepared for the presentation of individual topics. Questions are answered in a convincing way. The flexibility and advantages of our tactics are emphasised over the tactics of the Western powers. Considerable difficulties are caused by the general lack of maps in the local army.'



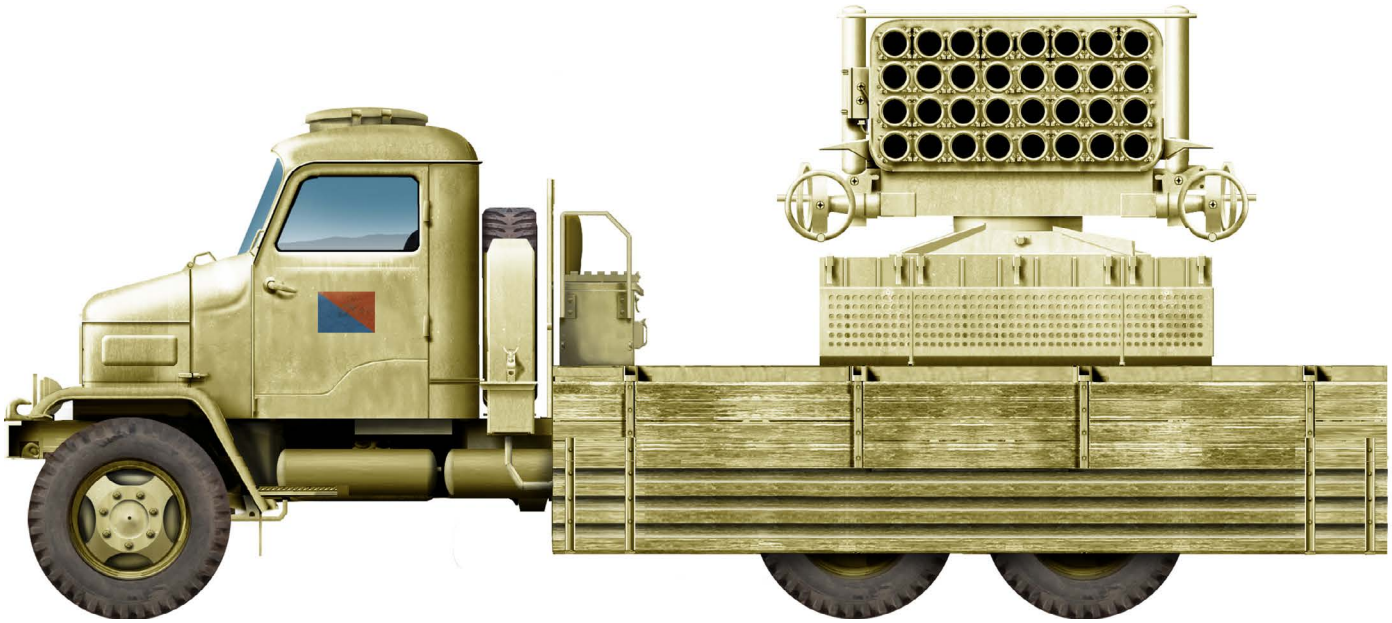
Although Skoda Works (Škodovy závody) was one of the world's leading producers of artillery weapons, after the communist coup in February 1948 the development of Czechoslovak artillery systems was gradually curtailed and instead serial production of guns of Soviet origin, which had been designed before the Second World War, began in Czechoslovakia. In February 1951, the subsidiary factory of Skoda Works in Dubnica nad Váhom was renamed to Závody K. J. Vorošilova and became the centre of Czechoslovak post-war production of artillery weapons. Among the first Soviet guns produced in this factory under licence was the M1938 (M-30) howitzer, which received the Czechoslovak designation vz. 38. In 1953–57, 1,361 of these howitzers were produced in Czechoslovakia. In 1955, 80 vz. 38 howitzers were exported to Egypt, including the example shown here, which took part in a military parade in Cairo on 22 July 1959. (Artwork by David Bocquelet)



Other Soviet artillery weapons produced under licence in Czechoslovakia included the M1931/37 (A-19) gun, which received the Czechoslovak designation vz. 31/37. The first four vz. 31/37 guns were produced by Závody K. J. Vorošilova at Dubnica nad Váhom in 1954 (the original gun was in production at three Soviet arms plants from 1939 until 1946). The vz. 31/37 gun was one of the Czechoslovak artillery weapons delivered to Egypt in the mid-1950s. Thus, 38 examples were imported from Czechoslovakia in 1956, and another 12 M1931/37 guns were apparently shipped from the Soviet Union around the same time. The depicted gun was shown at the military parade in Cairo on 22 July 1959. (Artwork by David Bocquelet)



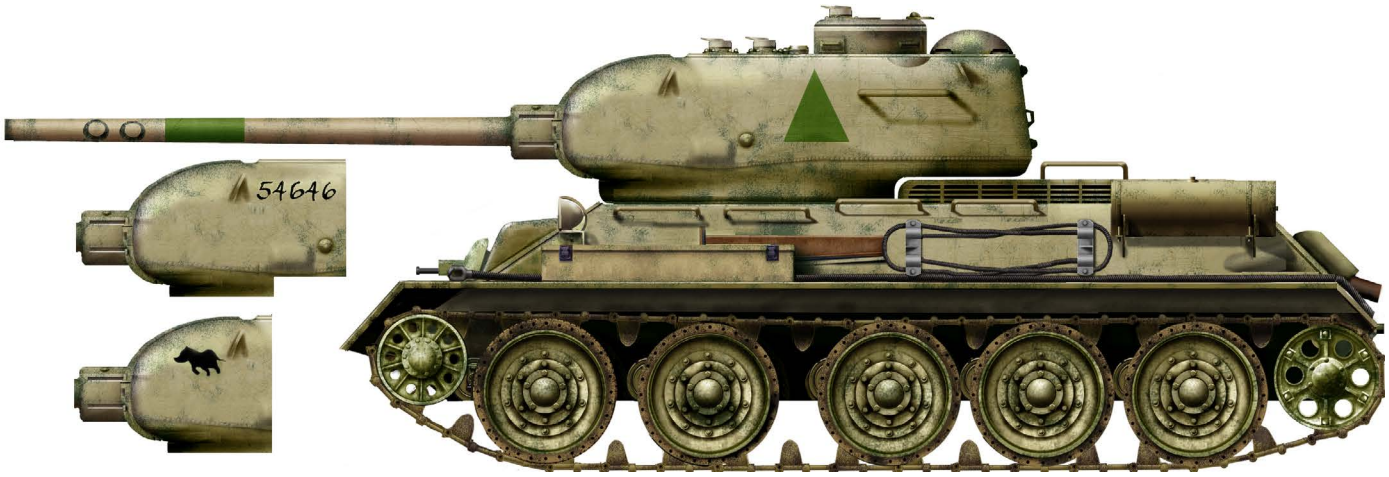
Within the Czechoslovak-Egyptian arms deals, Prague coordinated the delivery of Soviet BTR-152 armoured personnel carriers, of which Egypt ordered 400 between 1955 and 1957. Some of these vehicles, like the BTR-152 shown here, which took part in one of the military parades in Cairo in the late 1950s and early 1960s, had a Czechoslovak vz. 53 anti-aircraft machine gun installed in the troop compartment. The basis of the vz. 53 was four Soviet DShKM machine guns, which were produced under licence in Czechoslovakia after the Second World War. Between 1954 and 1955, 759 vz. 53 weapons were produced at Závody Jana Švermy (former Zbrojovka Brno), of which 132 were delivered to Egypt in 1956 and 1957. (Artwork by David Bocquelet)



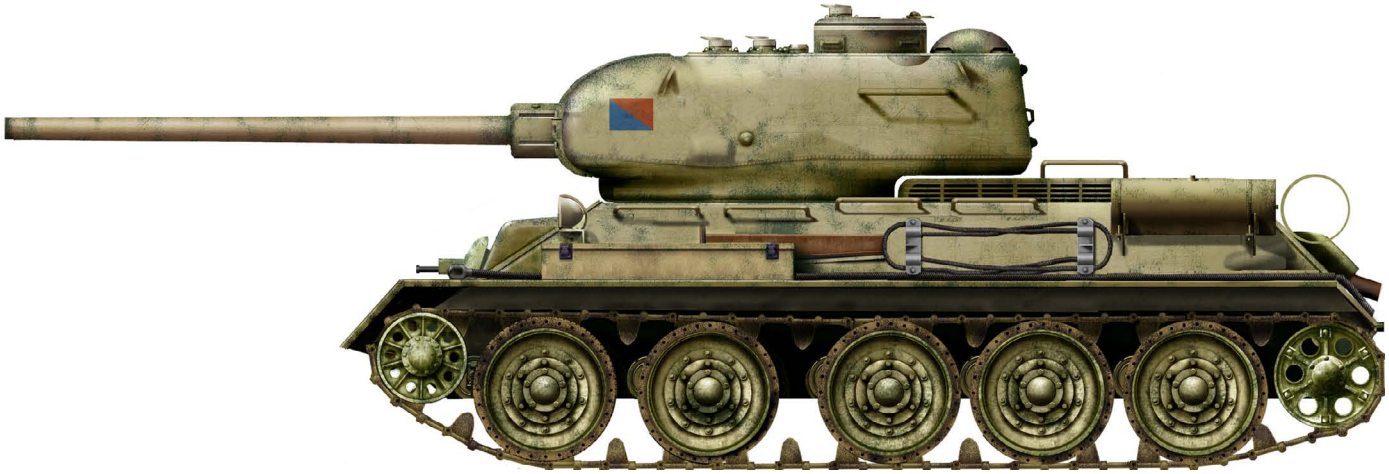
After the end of the Second World War, the development of several types of rocket launcher was started in Czechoslovakia. The most promising development work was carried out in Skoda Works which completed and tested an RK-2 rocket launcher prototype in early 1950. Although the 130mm calibre of the weapon was not unified with Soviet armament, its introduction into the Czechoslovak Army was recommended by Soviet military advisors. Thus, under the name vz. 51, the multiple rocket launcher based on the Praga V3S chassis was produced by Závody 9. mája at Trenčín-Kubra between 1953 and 1957. The subsequent production was carried out by Závody K. J. Vorošilova at Dubnica nad Váhom. Among others, Czechoslovakia delivered 36 of these multiple rocket launchers to Egypt in 1956. The vz. 51s of the Egyptian Army took part in the fighting of the Arab-Israeli wars in 1956, 1967 and 1973. The pictured example was captured by the Israel Defence Forces during the Six-Day War in June 1967. (Artwork by David Bocquelet)

Between 1953 and 1957 the ČKD Sokolovo Works in Prague and Závody J. V. Stalina in Martin manufactured 771 SU-100 self-propelled guns under the local designation SD-100. The Czechoslovak People's Army obtained 460 vehicles with remaining examples exported to the Warsaw Pact countries and to the Middle East. Foreign users included the Egyptian Army, which acquired 125 SD-100 self-propelled guns in 1956. The Egyptian vehicles joined the fighting of the Suez War in October and November 1956 shortly after their delivery. Among them was the SD-100 with the early crescent moon markings of the Nasser period shown here. This particular vehicle was captured by British paratroopers in the Suez Canal area. (Artwork by David Bocquelet)

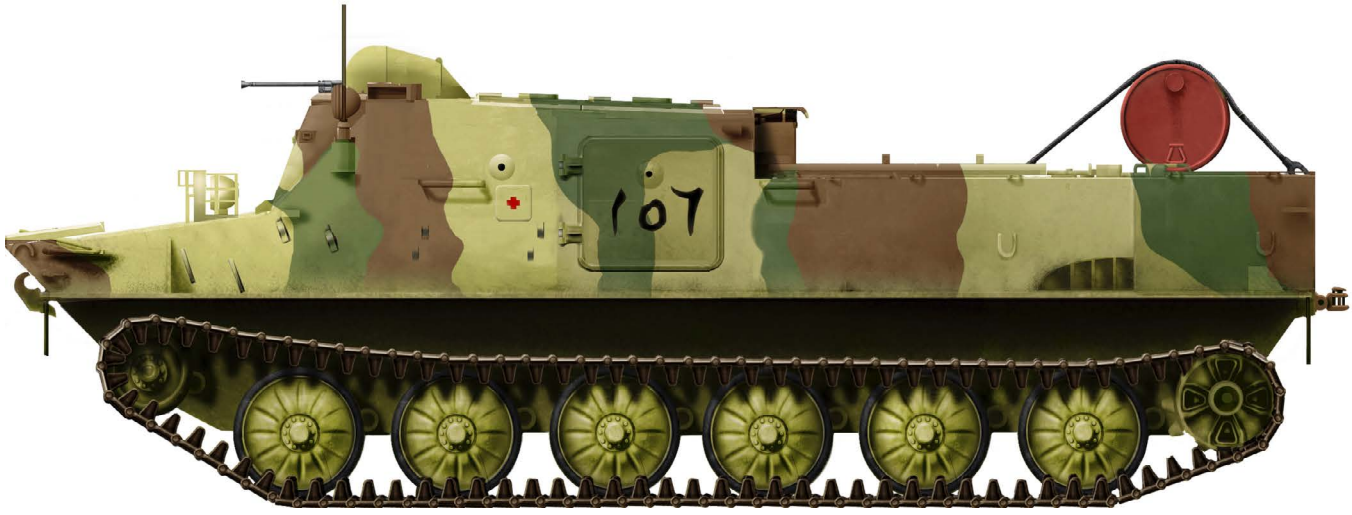
Soviet and Czechoslovak armoured vehicles delivered to Egypt in the mid-1950s saw a standard overall sand finish which was often accompanied by painted black silhouettes of various wild animals for parades. The pictured SD-100 self-propelled gun, with a diving hawk symbol, participated in the Cairo military parade in 1961. In 1970, Czechoslovakia delivered an additional 100 SD-100 vehicles to Egypt from the stocks of the Czechoslovak People's Army. The Egyptian SD-100s saw fighting in the Arab-Israeli wars in 1956, 1967 and 1973. (Artwork by David Bocquelet)



Another Soviet armoured vehicle produced under Czechoslovak licence was the T-34/85 medium tank, the production of which was performed by the ČKD Sokolovo Works in Prague and Závody J. V. Stalina in Martin between 1952 and 1956. These two plants manufactured 2,736 T-34/85 vehicles, some of which were exported to the Warsaw Pact states and to the Middle East, including Egypt. The tanks, such as the example with green triangle shown here, participated in the 1956 Arab-Israeli War. After its capture by the Israel Defence Forces, the vehicle was marked with the Israeli inventory number 54646 (upper inset). Some Egyptian T-34/85s from this period can be also seen with a rhino symbol on the turret, such as the tank which participated in the military parade in Cairo on 22 July 1959 (lower inset). (Artwork by David Bocquelet)

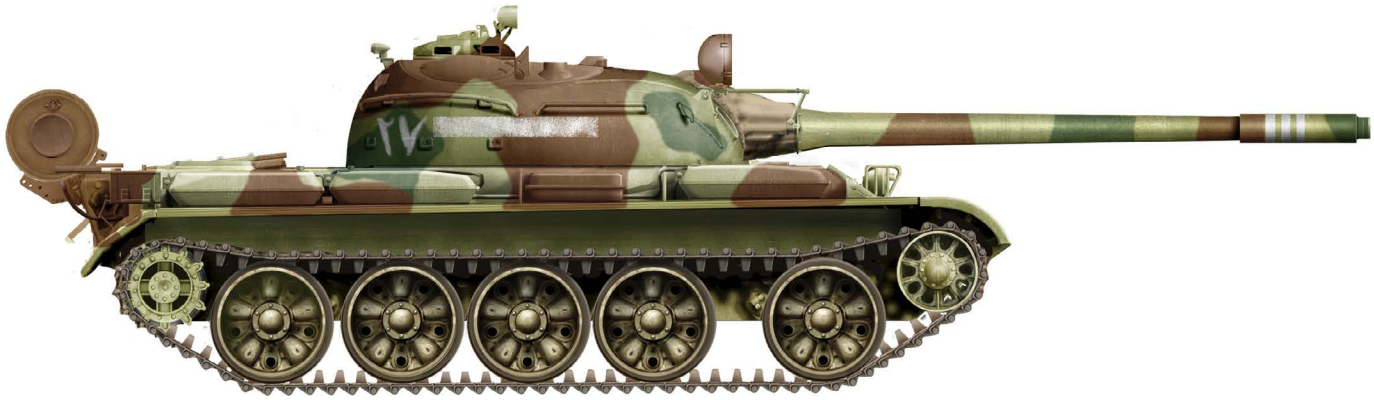


Between 1955 and 1957, Egypt obtained 290 T-34/85 vehicles from Czechoslovakia. As well as the Suez War in 1956, Egyptian T-34/85 tanks also participated in the Egyptian intervention in North Yemen (1962-1967), the Six-Day War (1967) and the Yom Kippur War (1973). Moreover, in early 1965, Egypt delivered 32 T-34/85 tanks to Cyprus, where they were unsuccessfully engaged in repelling the Turkish invasion in July and August 1974. The depicted vehicle was destroyed by the Israel Defence Forces in the Sinai desert in June 1967 during the Six-Day War. The red and blue rectangle flash on the turret is that of the Egyptian Armoured Corps and was worn on many tanks of this period. (Artwork by David Bocquelet)

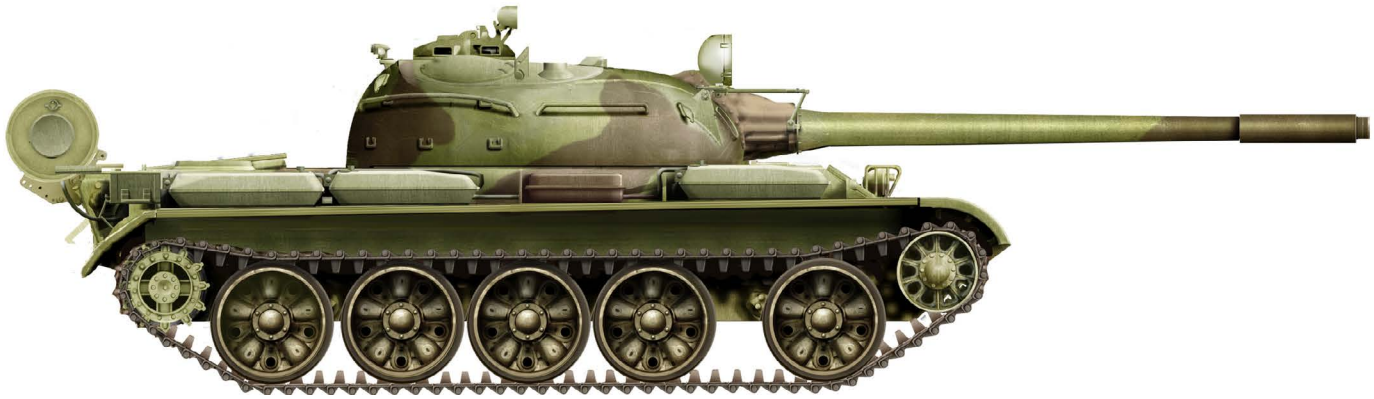


For the crossing of the Suez Canal, the Egyptian Army acquired altogether 810 OT-62 TOPAS amphibious armoured personnel carriers from Czechoslovakia of various modifications which were delivered to Egypt between 1969 and 1972 (the overall production run of the OT-62 was 2,641 vehicles). The depicted vehicle took part in the fighting of the 1973 Arab-Israeli War. Following its capture by Israeli troops, this OT-62 was subsequently deployed against its former user. (Artwork by David Bocquelet)

The OT-62 TOPAS was the Czechoslovak upgrade of the Soviet BTR-50PA armoured personnel carrier which was produced by Podpolianske strojárne Detva between 1963 and 1972. The original V-6V engine had been redesigned into a supercharged PV-6. The transmission was replaced with a five-speed gearbox and a new gear train. New torsion bars and sprocket wheel were incorporated in the hull. The armament was installed in the small turret and featured vz. 59 machine gun with T-21 bazooka. The OT-62 shown here took part in the Cairo military parade in 1974 which commemorated the fighting of the 1973 Arab-Israeli War. (Artwork by David Bocquelet)

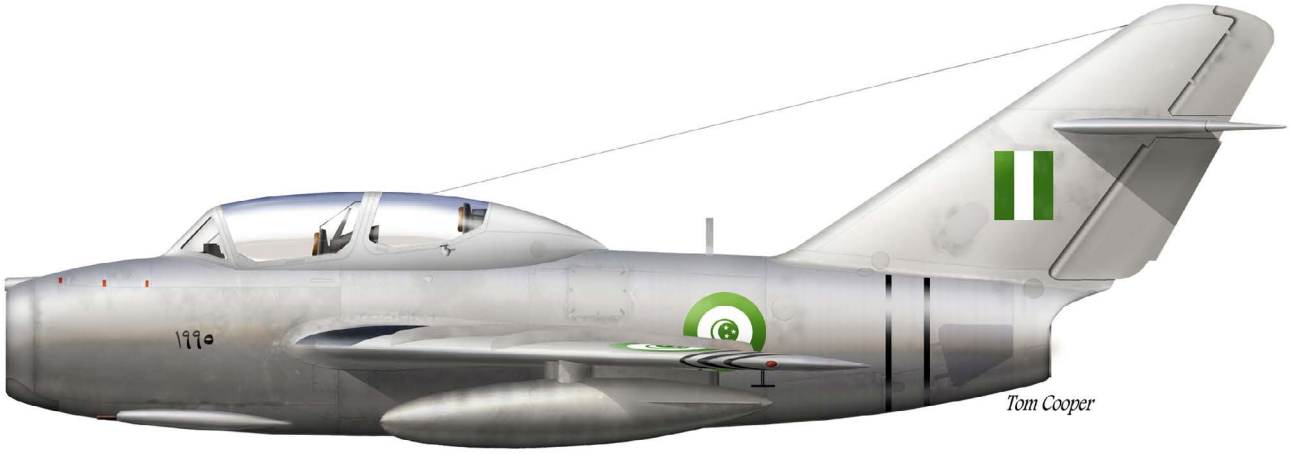


Czechoslovak licence production of the Soviet T-55 medium tank was launched in Turčianske strojárne (former Závody J. V. Stalina) in 1964. In 1967, production switched to the upgraded T-55A variant, but only for the Czechoslovak People's Army and other Warsaw Pact armed forces. Thus, the production of the T-55 vehicles for the Third World countries continued until 1981. However, the design of these tanks already incorporated some modernisation elements from the T-55A version. The depicted vehicle of the Egyptian Army participated in the 1973 Arab-Israeli War on the Sinai front. Up to the outbreak of the conflict, Czechoslovakia delivered some 400 T-55 tanks to Egypt. (Artwork by David Bocquelet)



This T-55 rode through Cairo's streets during the Egyptian military parade in 1974. The first T-55 tanks from Czechoslovakia were delivered to Egypt in 1970 and came from the stocks of the Czechoslovak People's Army. In total, Prague delivered 520 T-55 medium tanks and 10 T-55K command tanks until the end of 1977. The vehicles from later deliveries were equipped with the DShKM machine gun mounted in front of the loader's hatch. (Artwork by David Bocquelet)

Up to the outbreak of the 1956 Arab-Israeli War, Czechoslovakia delivered 80 MiG-15bis fighters, some of which were manufactured in the Soviet Union and came from the inventory of the Czechoslovak Air Force. In order to replace losses suffered during the conflict, an additional 40 MiG-15bis airplanes were provided by Czechoslovakia to the Egyptian Air Force in 1957 and 1959. All aircraft were painted in two layers of clear lacquer mixed with 10 percent and 5 percent aluminium powder, respectively, and a layer of varnish. The roundels of the Egyptian Air Force were applied in six positions. Moreover, all received wide 'walkways' along wing roots in dark grey. Serial numbers were applied randomly in the range 1900-1999 and 2600-2799. (Artwork by Tom Cooper)



The first six MiG-15UTI trainers from Czechoslovak licence production at Středočeské strojírny (later renamed to Aero Vodochody) arrived in Egypt in 1955. The remaining 31 aircraft of this type were delivered in 1957 and 1959. They wore the same silver grey overall livery, national markings and identification insignia as the single-seaters. The serials of the first batch were in the range 1990-1999: subsequent examples received serials in the ranges 22xx and 29xx. The last few Egyptian MiG-15UTIs of Czechoslovak origin served well into the early 1980s. (Artwork by Tom Cooper)

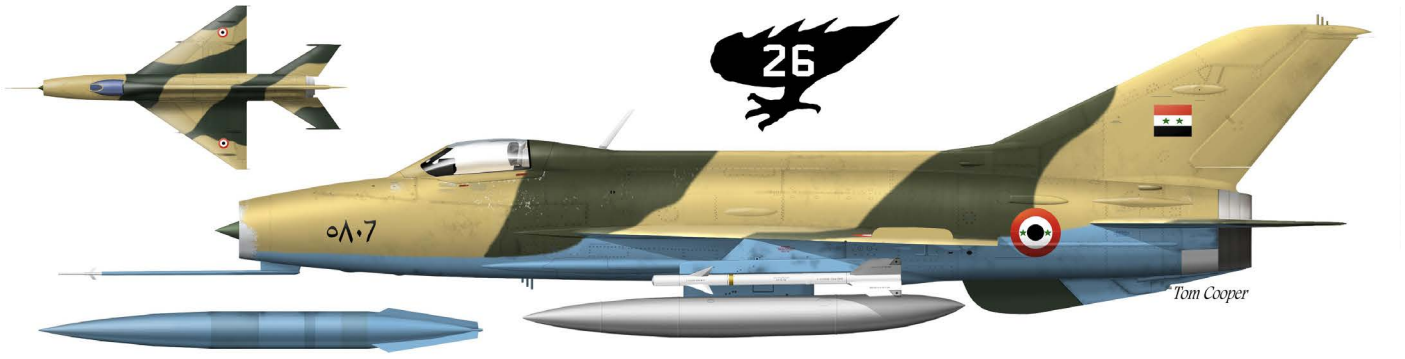
In 1963, Prague delivered a batch of 20 Yak-11 piston-engined trainers retired from the stocks of the Czechoslovak Air Force and originally manufactured in Czechoslovakia under licence by Let Kunovice. All aircraft were painted in 5300 *zeleň střední* (medium green) overall. At Egyptian request, they received stripes 500mm (20in) wide painted in 6400 *žlutá chromová tmavá* (dark chrome yellow) on the wing tips and rear fuselage. The external inscriptions were in English, while the inscriptions in the cockpits were left in the original wording (Czech, Slovak or Russian). The aircraft had been delivered without insignia and tactical numbers on the fuselage and wing: these – including serials in the range 4xx – were applied in Egypt. Two double launchers for Sakr 88mm unguided rockets were attached under the wingtips after delivery to Egypt. It was in this configuration that the Egyptian Yaks saw intensive combat deployment during the Yemen Civil War of 1964–1967. (Artwork by Tom Cooper)

In 1957, Czechoslovakia delivered 10 L-60 Brigadýr utility aircraft to Egypt. Originally, they were operated by one of the Egyptian civilian authorities, only to be taken over later by the United Arab Republic Air Force. Reportedly, both Egypt and Syria bought a mix of L-60B agricultural crop-spraying aircraft (with 300-litre tanks for chemicals), perhaps some L-60E air ambulance examples, and some L-60A liaison aircraft. In 1958, they were taken-up by the United Arab Republic Air Force and probably all ended in Egypt. The depicted aircraft is shown in the original livery which was as applied prior to delivery in 1957 and consisted of 1000 *bílá* (white) or 6003 *slonová kost* (ivory) on upper surfaces, and 1010 *šeď pastelová* (pastel grey) on undersurfaces. (Artwork by Jameel Patel)

The L-60 Brigadýr was manufactured by Orličan at Choceň between July 1956 and June 1959. The total production run consisted of 273 aircraft of all versions, including L-60A military liaison aircraft which was operated by the Czechoslovak Air Force under the designation K-60. Its armament was composed of 125kg (276 lb) of bombs and one flexible vz. 52 machine gun, with 300 rounds of ammunition, installed in the rear cockpit. Around the mid-1960s the Egyptian L-60s were operated by the Health and Agricultural Squadron of the United Arab Republic Air Force. By that time, they had been repainted in the shade known locally as 'trainer yellow overall' shown in this artwork. (Artwork by Jameel Patel)

After the USSR, Egypt became the biggest operator of L-29s, acquiring 122 by 1969. The aircraft were originally delivered wearing only a layer of clearcoat lacquer over their aluminium skins and lacked internal armament. Because the EAF was critically short of ground-attack aircraft, in 1973 the Air Force Academy set up two operational units: Nos. 6 and 16 Squadrons, home-based at Kom Awshim and Bilbeis, respectively. Initially, these were armed with the usual twin-rail pylons for Sakr unguided rockets, fitted directly 'in the field', without any special tools (and which included drilling holes in the main wing spar beams). Eventually, the Egyptians purchased Czechoslovak-made pylons and RB-57/4M pods for four Soviet-designed S-5M unguided 57mm rockets: that was the weapons configuration with which the type was deployed in combat during the October 1973 Arab-Israeli War. (Artwork by Tom Cooper)

On their delivery to Egypt, and assembly and handover at Dikhelia AB, outside Alexandria, in 1966–1967, L-29s wore only a protecting layer of clearcoat over their metal skin. Immediately after the June 1967 Arab-Israeli War, they received a standardised camouflage pattern, consisting of 5450 *khaki* (khaki) and 6270 *béžová tmavá* (dark beige) on upper surfaces and sides, and 4265 *modř pastelová* (pastel blue) on the lower surfaces, illustrated here. By 1973, aircraft assigned to two combat units of the Air Force Academy received the Nile Valley camouflage pattern in beige (BS381C/388), grey-green (BS381C/283), and black-green on upper surfaces and sides, and light admiralty grey (BS381C/697) on undersurfaces, as illustrated in the preceeding artwork. Later on, several received 500mm (20in) wide 'trainer stripes' applied around their wings, denoting them as training aircraft. (Artwork by Tom Cooper)



In 1969, Egypt acquired 30 MiG-21F-13 fighters manufactured under licence by Aero Vodochody. All received the same, standardised camouflage pattern applied before delivery, and including 5400 *khaki* (khaki) and 6270 *béžová tmavá* (dark beige) on the upper and side surfaces, with 4265 *modř pastelová* (pastel blue) on the lower surfaces. They arrived equipped with their usual drop tanks with a capacity of 490-litres (129 US gals), painted in pastel blue (shown inset), which the Egyptians usually replaced by their locally designed 800-litre drop tanks (usually left in bare metal overall; shown installed on the centreline). In addition to one internal 30mm gun (installed on the right side below the cockpit), primary armament consisted of two R-3S (ASCC/NATO-codename 'AA-2 Atoll') air-to-air missiles. This example served with No. 26 Squadron, widely perceived as the premier air combat asset of the Egyptian Air Force, the crest of which is shown inset. (Artwork by Tom Cooper)

Due to the technical problems which plagued the fleet of Egyptian Alpha Jet trainers, Libya donated 12 L-39ZO Albatros training and light combat aircraft to the Egyptian Air Force which were delivered in 1992 and 1993 and received Egyptian serial numbers 1701–1712. These were some of the oldest L-39ZO trainers of the Libyan Arab Air Force, manufactured in Czechoslovakia in 1978 and 1979. They were first operated from an air base in the Alexandria area, before moving to the Air Force Academy in Bilbeis. One of the aircraft (1703) was destroyed in a crash shortly after the delivery, the remaining jets underwent general overhaul at LOTN aircraft repair plant in Slovakia in 2001 and 2002. The ex-Libyan L-39ZOs were reportedly operated by the Egyptian Air Force until 2009. (Artwork by Tom Cooper)

Crest of the MTC in Cairo, with school's mottoes: Knowledge, Work, Piety. (Iren Bartošek via Milan Vyhlídal)

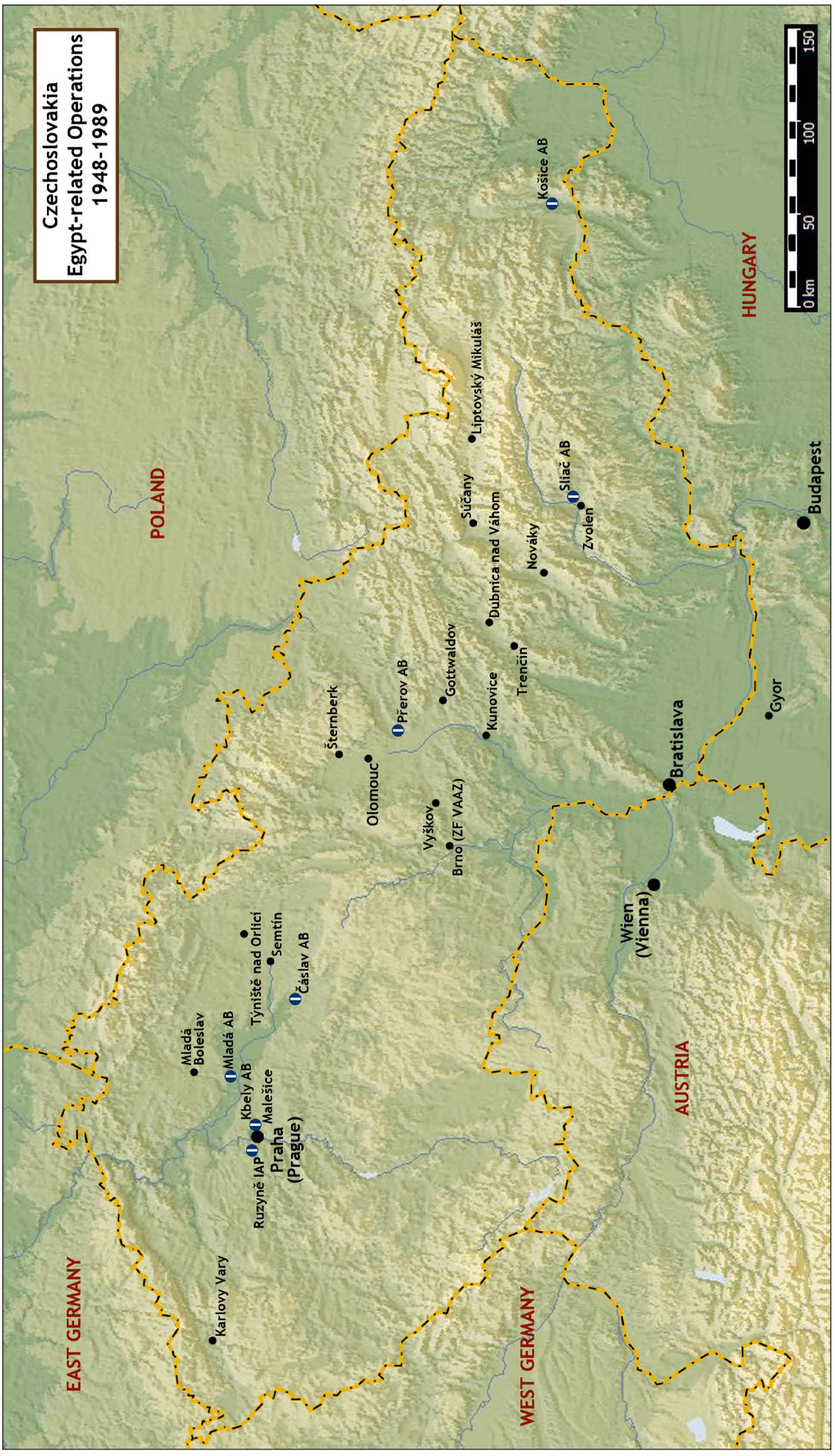
A nice study of Egyptian L-29 serial number 1580 in the early 1980s. Gauging by its Nile Valley camouflage pattern, the jet served with No. 6 or No. 16 Squadrons during the October 1973 Arab-Israeli War, when this type was usually armed with a pair of RB-57/4M pods for four unguided 57mm rockets. (Albert Grandolini Collection)

An Egyptian L-29 in an unusual all-white scheme after refurbishment at LOTN aircraft repair plant at Trenčín in 2000. (Photo by Miroslav Gyűrösi)

The last major piece of equipment of Czechoslovak origin was a batch of 50 Aero L-59E Super Albatros trainers, acquired from the Czech Republic in 1992. This beautiful study shows the example with serial number 1807 during pre-flight testing in the Czech Republic. (Aero Vodochody)

While one of the 50 L-59Es ordered by Egypt was destroyed prior to delivery, 49 eventually reached their customer, including four in 1992, 26 in 1993, eight in 1993, and the last 23 in 1994. This view nicely reveals details of the undersurfaces and the 23mm gun on the same L-59E, serial number 1807, as shown in the previous photograph. (Aero Vodochody)

Another view of the L-59E serial number 1807, this time showing details of the camouflage pattern on top surfaces to advantage. (Aero Vodochody)



A map of Czechoslovakia with known sites of operations related to Egypt between 1948 and 1989. (Map by Tom Cooper)

On 22 April, instructor Major František Fořt was recalled prematurely to Czechoslovakia, for reasons unknown to the commander of Course 555, Lieutenant Colonel Faifer. As a replacement, Milan Forst arrived in Egypt on 1 June 1960, together with his wife and wives of the other three instructors. All wives left for home on 26 August and 13 September respectively. 'Their three-month stay here significantly contributed to the improvement of mood and ability to fulfil the given task.' Following their request, instructors Forst and Prokeš were let off and both departed on 16 September.

In comparison to the previous course, the syllabus of Course 555 was extended with additional topics such as the deployment of the air force against enemy naval landing forces, air support of naval landing forces, combat use of the air force against maritime transports, and use of fighter-bombers against weapons of mass destruction. The course was successfully completed on 20 October 1960. 'The students were given a large number of tasks that required intensive and continuous study. […] Homeworks were worked out by most students meticulously, often to a larger extent than assigned.'[30]

THE UARAF PHOTOGRAPHY COURSE

The assistance of the Czechoslovak Air Force to the UARAF continued in 1960 as well. During October 1961, the Egyptian Air Attaché Abbassi contacted the HTS officials in Prague with an urgent request for the rapid dispatch of an expert on AFP-21K aircraft cameras. On 5 December 1960, the corresponding Supplement No. 4 of Contract No. 40-64-213 was signed. Under this, Czechoslovakia sent instructor Captain Pavel Samek and interpreter Captain Oldřich Pazourek to Egypt for three months. Both arrived in Cairo on 17 January 1961.

The undertaking, with Czechoslovak cover name Course 583, commenced officially at Almaza air base on 20 January 1961. Following the preparation of teaching aids, related drawings and diagrams, the instruction began in earnest on 28 January. Course 583 was attended by 14 Egyptian students, two of whom were officers, the rest being non-commissioned officers and soldiers. The purpose of the training was to provide expertise in the handling and maintenance of AFP-21K cameras. The course was completed on 16 March with the final examinations of 13 trainees – the last one was not graded due to the illness.

Thereafter, up to 30 March 1961, Captain Samek toured Almaza, Cairo West, Abu Suweir, and Kabrid air bases to carry out inspections and, if possible, repairs of AFP-21K cameras deployed at these locations. Following his advice, the Egyptians established a specialised repair workshop at Almaza air base for inspection, maintenance, repair, and adjustment of all aircraft cameras used within the UARAF. Hence, several of Course 583's best graduates were immediately transferred to this new facility.[31]

OPERATIONS 8519 AND 8515

As of 1961, out of the several military repair plants contracted for by the Egyptians in 1957, only the ammunition maintenance plant with Czechoslovak code name Operation 8519 was showing signs of completion. Therefore, on 19 September 1960, Supplement No. 7 of Contract No. 657/1 was signed with the purpose of dispatching Czechoslovak military experts Major Zdeněk Erben and Captain Vladimír Starý to Egypt to supervise the assembly of specialised equipment and machinery of Czechoslovak and Soviet origin for Operation 8519 together with an additional seven specialists from Odbyt strojů a nářadí (main supplier) and Adamovské strojírny. Six Czechoslovak advisors under the leadership of Major Erben left for the UAR on 5 September 1960. The remaining three advisors arrived on 24 October and 14 December 1960. The activities of the Czechoslovak advisory team received the cover designation Course 537.

In fact, Operation 8519 was composed of several facilities (three maintenance plants, a repair workshop, and one testing laboratory) situated at three different locations in Egypt. Moreover, the UAR received equipment and machinery for the fourth maintenance plant which, according to the then plans, was to be located near Damascus in Syria. However, this intention never materialised and, after the dissolution of the UAR, the Syrians had to order this facility on their own from Czechoslovakia in July 1962 (Operation 7419).

Czechoslovak experts commenced the work at the ammunition maintenance plant near Asyut on 12 September 1960. The assembly supervision was completed there on 30 November, almost two weeks earlier than planned. Thereafter, they moved to the second facility at Wadi Hof near Cairo which was composed of a maintenance plant, repair workshop, and testing laboratory. The installation of specialised equipment under the supervision of Czechoslovak experts commenced there from 5 December 1960. The remaining ammunition maintenance plant lay near Alexandria. All facilities were located in military areas in the desert some 20 to 25 kilometres from those cities.

Following the installation of all machinery and equipment, Czechoslovak experts functioned as instructors for the staff of the facilities and supervisors during their start-up. Moreover, they worked out the necessary technological documentation for the proper operation of the ammunition maintenance plants. The activity of the Czechoslovak advisory team at Operation 8519 was completed around the summer of 1962.[32]

In the same year, Cairo requested the extension of the ammunition maintenance plant in order to be able to provide a complete overhaul of ammunition used by the United Arab Republic Army. Prague accepted the Egyptian requirement and thus various Czechoslovak experts from the Military Design Institute (design authority) and the company Adamovské strojírny Dubnica nad Váhom (final supplier) were being dispatched to Egypt at least up to 1968 to secure technical assistance for Operation 8519.[33]

Additional Czechoslovak military assistance related to this facility was provided in the form of the training of 16 Egyptians (seven department heads, three ammunition chemists, and six ammunition ballistics experts) that was performed under the cover name Course 240 at the ZF VAAZ in Brno, the Military Repair Plant Nováky (*Vojenský opravárenský závod Nováky*), the ammunition base at Týniště nad Orlicí, and the shooting range at Záhorie from 12 October 1964 to 20 April 1965.[34]

Related to the establishment of military repair facilities in Egypt, namely the infantry and artillery armament repair plant (Operation 8515), was the activity of the team of designers from the Military Design Institute under the cover name Course 581. This enterprise was ordered within the frame of Contact No. 657/6 that was signed on 6 September 1960. The primary task of the Czechoslovak experts was to assist Egyptian designers in the creation of executive drawings and technical calculations of energetic sources, external and internal distribution of electric energy, compressed air and water supply, ventilation, and drainage for Operation 8515. The other assignment was to help with the preparation of specifications and quantities of machinery, equipment, and installation material for energy sources and distribution equipment.

COUNTERINSURGENCY YAK-11S

The dissatisfaction of the Syrians with Egyptian dominance in the United Arab Republic, Nasser's methods of autocratic military dictatorship, economic difficulties, and a push for political centralisation rose steadily until it culminated on 28 September 1961 with the uprising by disgruntled Syrian Army officers. This coup d'état resulted in the break-up of the UAR and the restoration of an independent Syrian Republic. Egypt retained as its official name 'the United Arab Republic' until 1971 when the new official name – Arab Republic of Egypt – began to be used.

Despite the setback to his pan-Arab dreams, Egyptian president Gamal Abdel Nasser embarked on another foreign relations project one year later – direct military intervention in the Yemeni Civil War. The conflict began with a coup d'état carried out on 26 September 1962 by military revolutionaries under the command of Colonel Abdullah al-Sallal who overthrew the newly crowned Imam Muhammad al-Badr and declared Yemen a republic under his presidency. However, the imam managed to escape to the northern remote areas bordering Saudi Arabia where he rallied support from local tribes for armed resistance. Thus, the situation escalated rapidly into a full-scale civil war. Nasser came to al-Sallal's rescue and dispatched as many as 70,000 Egyptian troops with combat aircraft and heavy weapons of Soviet and Czechoslovak origin against the rebels. Besides, the official regime of the Yemen Arab Republic was supported by Moscow and Prague as well.

Since the Yemeni Air Force was basically without any airworthy aircraft, the UAR decided to buy for its use several propeller-driven airplanes suitable for counterinsurgency duties. Thus, on 23 October 1962, the HTS representative in Cairo reported back to Prague that the Ministry of War requested urgent delivery of 20 Yak-11 trainers modified for combat deployment. Together with aircraft, a large number of related spare parts were demanded. The Egyptians had already discussed this matter with the Soviets before and Moscow recommended they turn to Prague. The Ministry of National Defence duly approved the delivery of the requested number of modified Yak-11s from the surplus stocks of the Czechoslovak Air Force. Although the Ministry of War requested the overflight of all airplanes by Czechoslovak pilots directly to Egypt, Deputy Commander of the Czechoslovak Air Force and Air Defence Force Major General Vladimír Hlavatý flatly refused such a proposition.

The selected Yak-11s were transferred to the Aircraft Repair Plant Trenčín that performed their inspection and modification with the installation of the UBK machine gun, bomb racks, RSIU-3M radio station, RPKO-10 radio compass, and LUN 1222 aircraft compass. Thereafter, the aircraft were packed into crates and delivered to Egypt in a disassembled state, along with spare parts and tools. The supply was provided free of charge as compensation for the faulty ammunition, however, the subsequent assembly and test flights performed by personnel of the Aircraft Repair Plant Trenčín was carried out on a commercial basis. For this reason, Supplement No. 1 to General Contract No. 40-164-212 was signed on 16 February 1963.

All 20 Yak-11 trainers were modified and exported to Egypt during the first half of 1963. The assembly team from the Aircraft Repair Plant Trenčín led by *Major* Ivan Chrenka was composed of one test pilot (Major Mojmír Reich), five mechanics, and one interpreter (Jiří Vaďura). Following their arrival, all members of the group were moved to Dikhelia air base on 10 July 1963. The initial 16 containers delivered from Alexandria port were already there, however, the actual assembly could begin only on 20 July when the remaining five containers were transported to Dikhelia, since one of these contained tools and assembly jigs. The assembly of one airplane usually took 11 days, with the test flight and troubleshooting on the 12th day. The last day was reserved

Led by Captain Miloš Konečný, the advisory team was composed of an additional four specialists. According to the contract, the Czechoslovak experts were to provide assistance only. However, due to the low expertise of some Egyptian designers, Czechoslovak specialists had sometimes to do almost all design work themselves. Course 581 was completed on 30 July 1961.[35]

SPARE PARTS

While the VAAZ began to play a crucial role in the establishment of the MTC in the early 1960s, the deliveries of military hardware from Czechoslovakia for the UAR were very limited in the same time frame. There were several reasons for this development. Firstly, Prague was unwilling or unable to offer the latest armament demanded by Cairo and secondly, the Egyptians insisted on very generous terms of payment which were completely unacceptable for the HTS. Therefore, the only exception from this pattern was large-scale deliveries of spare parts for the armament that was delivered to Egypt and Syria in previous years.

Corresponding negotiations commenced in spring 1959. However, due to the Egyptian unwillingness to accept Czechoslovak terms of payment, the signing of the protocol on spare parts supply took place almost one year later, on 26 March 1960. Meanwhile, the HTS officials discussed the matter several times with Soviet representatives, mostly in order to unify the financial aspects of spare parts deliveries with Moscow. Following the information from Soviet officials that they would apply the rule of payment in cash (i.e. without granting credit), the HTS gladly followed the same line.

Thus, the agreement for the deliveries of spare parts in the years 1960–1967 to the overall value of up to 9 million GBP (some 180 million CSK) was concluded on 18 July 1960. Corresponding contracts received Czechoslovak numerical code names 40-115-12, 40-116-22, 40-117-21-23, 40-118-21-23, and 9JD-13-23. The Ministry of National Defence used this opportunity to get rid of the spare parts for some obsolete types of weaponry from its stock. However, large parts of respective consignments were composed of components manufactured newly in Czechoslovak arms factories.[36]

AMMUNITION QUALITY ISSUES

Despite the lull in the deliveries of military hardware to Egypt, respective officials at the HTS headquarters in Prague were still busy. The Ministry of War in Cairo lodged several complaints related to the supposedly faulty Czechoslovak ammunition that

for the zeroing of the machine gun. According to the terms of the contract, the Czechoslovak personnel were assisted by 27 (later reduced to 19) Egyptian aircraft mechanics. This enabled the acceleration of the assembly and thus almost every second day, a Yak-11 was completed. The handover of the first 12 airplanes took place on 3 September 1963, the remaining eight examples were handed over on 14 September.[38]

SECOND CONTRACT

The interest of the UARAF in the acquisition of surplus Czechoslovak Yak-11s for counterinsurgency duties persisted and a new contract for the delivery of an additional 20 airplanes was signed between the HTS and the Ministry of War on 14 October 1963. These Yaks were ordered in an almost identical configuration to the first 20 airplanes, with the installation of a machine gun, bomb pylons, RSIU-3M radio station, and PDK-3 compass. Unlike the previous trainers, most of these aircraft came from the inventory of the Svazarm (*Svaz pro spolupráci s armádou*, the Union for Cooperation with the Army), the Czechoslovak paramilitary sports organisation modelled after the Soviet DOSAAF. The 25 Svazarm aircraft available for sale were assembled at the Svazarm airfield at Chrudim where Egyptian representatives selected the 15 most suitable examples. These were then supplemented by five Czechoslovak Air Force Yak-11s and whisked to the Svazarm workshop that was to perform their inspection and modification. However, Svazarm failed to accomplish this task completely which meant that the role of the final supplier was turned over to the Aircraft Repair Plant Trenčín.

Unlike the first order, when Major General Hlavatý expressed his reservations about the overflight of the airplanes to Egypt due to the practical feasibility and safety of the military pilots, nobody cared about those issues this time. Instead, Svazarm pilots were tasked to overfly the aircraft directly to the UAR. The armament was removed and together with ground support equipment was delivered in crates aboard a merchant ship. The initial 10 Yak-11s, officially declared as sports aircraft, were overflown along the route Trenčín – Bratislava – Belgrade (Yugoslavia) – Thessaloniki (Greece) – Athens (Greece) – Rhodes (Greece) – Nicosia (Cyprus) – Beirut (Lebanon) – Port Said – Almaza air base. The journey full of adventure commenced in late December 1963 and was completed on 22 January 1964 with just six Yaks delivered to the UARAF. Two airplanes remained in Belgrade (one pilot got sick and one aircraft was damaged on take-off on the icy runway), another two trainers were damaged during the landing at Thessaloniki.

While the Svazarm pilots returned to Czechoslovakia, the Ministry of National Defence dispatched Major Chrenka, Major Reich, two aircraft mechanics, and an interpreter to the UAR with the task to complete the recently delivered Yak-11s by installing the armament, and to carry out their test flights under the code names Course 641 (29 April 1964 to 10 June 1964) and Course 647 (29 April 1964 to 23 June 1964). The next overflight of 10 airplanes commenced on 19 March 1964 and was completed at Almaza 10 days later. However, due to fuel starvation, one Yak-11 crash-landed in Cyprus near the village of Philia Morphou on 27 March. In the meantime, the four airplanes from the first mission returned to Czechoslovakia and were readied for the overflight of the last remaining Yaks. The airplanes left Bratislava on 30 April but because of the malfunctions, two of them had to stay at Rhodes. While the rest of the group arrived in Almaza on 9 May, these two Yak-11 were officially handed over to the Egyptian authorities only on 27 July 1964. Probably during the same year, an additional five Yak-11s were overflown to the UAR as well.

During late spring 1964, Egyptian officials checked out the possibility of additional deliveries of the Czechoslovak Yak-11s. However, they lost interest very early on when they found Czechoslovak reluctance to provide some rubber components and other scarce spare parts for them.[39]

was delivered to Egypt within the frame of Czechoslovak-Egyptian arms deals between the years 1955 and 1957 from the stocks of the Czechoslovak People's Army. The first complaint was submitted in summer 1960 after the damage of barrels of two vz. 44 anti-aircraft guns and one T-34/85 tank. In order to find the cause of these defects, a test firing was organised on 17 July 1960 in the presence of Soviet advisor Zhelyabin and two Czechoslovak experts attached at that time to the MTC, Lieutenant Colonel Táborský and Major Fiala. However, the shooting took place without any problems.

Hence, two gun and ammunition specialists from the Artillery Command (*Velitelství dělostřelectva*) of the Czechoslovak People's Army, Lieutenant Colonel Jan Košta and Major Milan Vocel, were sent to Egypt and tasked to carry out a closer investigation of the matter. Both officers, together with HTS representative Jiří Navrátil, came to Egypt again in early August 1961 to participate in the complaint procedure. Meanwhile, the Ministry of War filed further complaints about fuses of 82mm mortar shells, 120mm mortar ammunition, 100mm rounds for SD-100 self-propelled guns, and 57mm ammunition for vz. 43 anti-tank guns.

During a one month stay in the UAR, the Czechoslovak group managed to reject all warranty claims, even though its members were aware that some of the Egyptian complaints are justified. The job done by both officers was subsequently praised in an official report: 'Both mentioned specialists, as expected, accomplished the given task well. Their expert interventions during the negotiations achieved that the Egyptian side could not clearly prove the quoted defects in the ammunition supplied from the Czechoslovak Republic. Based on the lack of conclusive documents, the investigating commission proposes to reject the complaint of the UAR.'

However, this victory was only temporary, since most of the defects submitted by the Egyptians were caused by minor manufacturing or material flaws of the Czechoslovak licence production and these shortcomings were well known within the ranks of the Czechoslovak People's Army. For this reason, corrective measures were taken in Czechoslovakia to eliminate or at least reduce the impact of these deficiencies at the actual shooting. Other problems were inflicted by poor packaging and damage during the transport of the ammunition on board Soviet ships to Egypt. Besides, upon Soviet insistence, Prague provided a warranty period of five years for the delivered ammunition. However, due to Cairo's urging the supply of weaponry as fast as possible, the rounds from the Czechoslovak military warehouses delivered to the

Egyptian Army were mostly manufactured during the years 1950 to 1954 for which the respective Czechoslovak factories offered only very limited guarantee period. And last but not least, thanks to the Czechoslovak military assistance, the Egyptian ammunition experts obtained enough knowledge and experience to enable them to compare original Soviet ammunition with Czechoslovak licence equivalents and issue legitimate complaints.

Moreover, a new Egyptian complaint, this time related to vz. 52 7.62mm rounds and fuses for 85mm rounds for vz. 44 guns, arrived in Prague in November 1961. At the same time, the Ministry of War wanted to return the defective ammunition to Czechoslovakia which would cause damage to Prague worth up to 52 million CSK. The HTS could theoretically continue in the refusal to accept the Egyptian demands, but this was a tactic destined for failure since Cairo could interrupt the payment of instalments of the credit; the very situation that had already happened to Poland. It was clear that a compromise solution was needed. Furthermore, the business interests of the HTS in the UAR could be jeopardised by such an attitude. The case escalated to such a level that the Politburo ÚV KSČ dealt with it during a sitting on 17 April 1962. At this opportunity, it was approved that the Ministry of National Defence would provide 7,500 MČZ-S-30 fuses for 85mm rounds for the vz. 44 guns from its stocks free of charge. As the definitive compensation, Czechoslovakia delivered free of charge 20 Yak-11 trainers with spare parts for combat deployment in the Yemen Civil War, 15 spare barrels for T-34/85 tanks, and five spare barrels for vz. 44 anti-aircraft guns.[37]

OPERATION 8514

Meanwhile, assistance to the UARAF continued in the form of the establishment of the central aircraft repair plant at Helwan (Operation 8514), near the Helwan Aircraft Factory (Factory No. 36). At that time, the main aircraft repair facility of the UARAF was located at Almaza air base. In 1962, a general contract (Contract No. 657/8) for the foundation of a brand-new repair plant was signed. Under this, the Czechoslovak specialists designed construction changes to existing facilities at Almaza and took part in the design of the new facility at Helwan. Moreover, up to 1965, Czechoslovakia delivered the necessary testing and repair equipment for all new Egyptian repair plants (Operation 8513 – 8516 and Operation 8518 – 8519) to the overall value of 150 million CSK.

Between 1963 and 1965, in total 37 Egyptians, including not only regular technicians but also chief officials for Operation 8514, were trained at Czechoslovak military aircraft repair facilities. During Course 234, the Aircraft Repair Plant Kbely and the Aircraft Repair Plant Malešice (*Letecké opravny Malešice*) trained 16 technologists and 12 mechanics for airframe and engine repairs of MiG-15 and Il-14 airplanes between 15 February and 21 May 1963. In February and May 1965, eight Egyptian executives for Operation 8514 underwent a training course that included lessons from economy and planning provided by lecturers of the Czech Technical University (*České vysoké učení technické*) and visits to seven Czechoslovak manufacturing plants. The instruction was attended by Abdel Aziz Amin Arif (director of the aircraft repair plant), Mawafak Mohamed Chafik Rabbat (chief engineer), Hassan Khourshid Tawfik (chief designer), Fathy Ismail Mohamed (chief technologist), Adly Aziz Youssef (chief of production), Mohamed Fahim Rayan Salem (chief planner), Ibrahim Badr el Din el Farghaly (chief mechanic), and Khaled el Rafai Khairy el Rafai (chief of guild).

As of 1965, combat units of the UARAF exclusively operated airplanes of Soviet origin such as MiG-15bis, MiG-15UTI, MiG-17, MiG-19, and MiG-21 fighters, Il-28 and Tu-16 bombers, An-12 and Il-14 transports together with Mi-1 and Mi-4 helicopters. However, at that time, the repair facility at Almaza was basically still not able to perform the general overhaul even of the MiG-15s that were introduced into the service of the Egyptian Air Force almost a decade earlier. Although the availability of tools and testing equipment, the organisation of work, and labour productivity were considered insufficient by Czechoslovak experts, the workmanship of Egyptian aircraft mechanics was found as good.

Between July and September 1965, two Czechoslovak engine specialists from Aircraft Repair Plant Malešice visited the repair facility at Almaza. In accordance with Supplement No. 13 to Contract. No. 657/8, they designed in situ the changes to the local jet engine testing room originating from Great Britain and originally designed for Rolls-Royce Avon engines, so that it could be used for testing of RD-45, VK-1, VK-1A, and VK-1F power plants of MiG-15, MiG-17, and Il-28 airplanes.

In 1966, 12 technical experts from the Czechoslovak military establishments and repair plants were dispatched to Egypt to assist with the introduction of the general overhauls of MiG-15, MiG-17, and MiG-19 fighters at Almaza. These activities were followed in 1967 with the assembly supervision of machinery and repair equipment installation at the first completed buildings at Helwan. At that time, the aircraft repair plant at Helwan was still under construction and its completion was planned to take place in 1970.[40]

ASSISTANCE FOR THE EGYPTIAN ARMS INDUSTRY

According to the contract from October 1956, Czechoslovakia had already introduced Egyptian production of infantry and artillery ammunition with deliveries of production machinery that up to 1964 reached an overall value of 4.5 million GBP (93 million CSK). While the establishment of military repair plants for the Egyptian military was moving slowly forward, the top officials of the Ministry of War asked for Czechoslovak assistance in the introduction of licence production of various types of guns and related ammunition. During negotiations in February 1961, the deputy minister of war requested a proposal for licence production of 82mm and 120mm mortar rounds, 23mm and 37mm aircraft cannons, DP and SG-43 machine guns, 107mm rounds for the B-11 recoilless rifle, together with 122mm high explosive anti-tank and smoke rounds.

The demanded weapons and ammunition were of Soviet origin but a large part of them had already been manufactured in Czechoslovakia under licence. Correspondingly, Prague contacted Moscow for further instructions. On 18 April 1961, an aide-mémoire was handed over to the Czechoslovak officials with an affirmative reply. Prague was allowed to provide the UAR respective licence and manufacturing documentation on the Soviet armament free of charge. At the same time, Soviet officials warned their Czechoslovak counterparts that they were not able to provide additional assistance in this matter. Further Czechoslovak dealings with the Egyptians stalled due to their sudden change of mind. The Ministry of War lost interest in the production of machine guns and instead preferred the licence manufacture of Czechoslovak gas masks, hand grenades, and scuba diving gear.

However, in the end, the production of Czechoslovak weapons in the UAR was much more limited. In practical terms, between 1961 and 1965, only the manufacture of the ZKM 452 small calibre rifle, ZP 47-49 shotgun, and Slavia 620 air gun was introduced in Factory No. 54. Egyptian officials asked for licenced production of the vz. 58 assault rifle in autumn 1965 but neither this project materialised.[41]

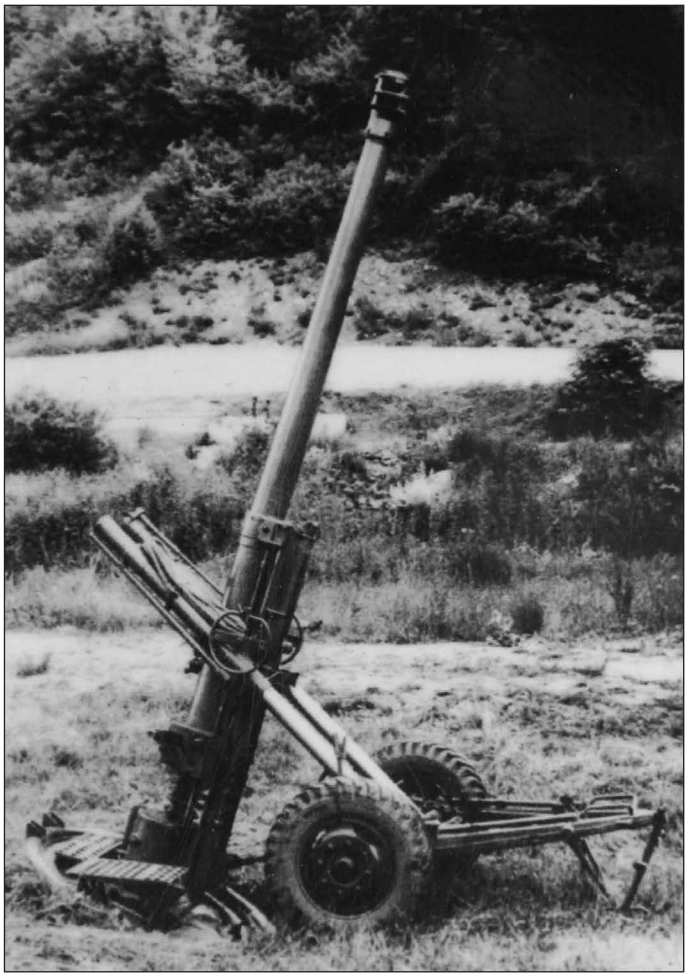
Despite these scanty results, the Ministry of War still pursued the idea of local production of heavy weaponry. Thus, during several rounds of negotiations lasting from May 1963 to January 1964, Czechoslovak officials accepted Egyptian requests and confirmed the readiness to establish a gun factory, a factory for the production of optical and measuring devices, a plant for the manufacturing of gas masks and diving suits, and an extension of existing ammunition production facilities. The scheme was approved by the Presidium ÚV KSČ (*Předsednictvo ÚV KSČ*) on 3 March 1964 with the condition that the deliveries could reach a maximum value of 200 million CSK that would be payable during the years 1964 to 1974 with an interest rate of 2 percent.

The respective agreement was signed on 15 March 1964 and covered Czechoslovak assistance in the establishment of several military and civilian manufacturing facilities (the gun factory, the factories for the production of optical devices, gas masks, artillery ammunition, tank engines, and components for televisions, and a foundry). The supplies were to be realised mostly by the Czechoslovak foreign trading companies Kovo, Technoexport, Strojimport, and Strojexport.

At the top of the list was the gun factory which was to be able to produce field guns of 60mm to 122mm calibres, anti-aircraft guns of 20mm to 60mm calibre, mortars up to 120mm, recoilless rifles up to 120mm, and suitable civilian products. The Egyptians demanded not only the manufacturing technology but the technical documentation for the production of Soviet armaments. Since the demanded types of artillery weapons were not manufactured in Czechoslovakia under licence, Czechoslovak officials proposed the construction of a universal armament plant that could initially produce arms of indigenous Czechoslovak design or Soviet types manufactured in Czechoslovakia (namely vz. 38 howitzer). For possible licence production, Prague offered 82mm and 120mm mortars, the vz. 59A 82mm recoilless rifle, and vz. 53 twin 30mm anti-aircraft cannon.

All of these weapons underwent extensive testing and shooting trials in Czechoslovakia under the supervision of Egyptian officers during 1964. Although Czechoslovak officials considered these evaluations as successful, their Egyptian counterparts did not share the same feelings. The final word went to Marshal Abdel Hakim Amer who supported the findings of the evaluation committee and decided not to introduce Czechoslovak guns and mortars into the inventory of the United Arab Republic Army. During negotiations of the Czechoslovak military-business delegation in Egypt during May 1965, the Czechoslovak officers tried to reverse the Egyptian decision, but in the end they were unsuccessful. Although the Egyptians acknowledged the qualities of the Czechoslovak armament, at the same time, they insisted on the provision of more modern weapons. From several Egyptian hints, Czechoslovak officers concluded that during his last visit to the Soviet Union, Marshal Amer was acquainted with the D-30 howitzer and ZSU-23-4 Shilka self-propelled radar-guided anti-aircraft weapon system.

Deputy Minister of War Marshal Hillal indicated that in the case of the offer of more advanced weapons, the Ministry of War could reconsider its previous decision and the new gun factory could be, after all, established for their production. He then specifically asked if Czechoslovakia was producing some modern artillery systems in the range of 20 to 160mm calibre. The head of the Czechoslovak delegation informed Marshal Hillal that a new 152mm grenade launcher was in later stages of its development and that it was supposed to replace 120mm and 160mm mortars, 152mm gun-howitzer, and partially, the 122mm howitzer. This reply attracted great interest and Marshal Hillal immediately requested the technical specification of the grenade launcher.



A rare image of the KLOKAN, a 152mm calibre grenade launcher offered to the Egyptians in 1966, but never purchased. (via Martin Smisek)

The weapon in question was designed under the cover name KLOKAN and, in fact, its development had been finished some four years earlier. The statement of Czechoslovak officials during the negotiations in Cairo about alleged new development was just a ruse to create the impression that the KLOKAN was the latest product of the Czechoslovak arms industry. Moreover, the further purpose of this lie was to gain time to prepare the stored prototypes for evaluation and shooting trials organised for the Egyptian delegation. As well as the KLOKAN, Czechoslovak officials proposed that the gun factory could produce spare barrels for artillery weapons already in the service of the United Arab Republic Army. In May 1966, a military delegation led by Marshal Hillal visited Czechoslovakia to participate in the presentation of the KLOKAN. Upon Egyptian request, demonstration trials including the live firing of the grenade launcher took place at the Záhorie range in June. However, the stormy weather during the actual shooting on 9 June 1966 had a negative effect on the KLOKAN's performance. Although the Czechoslovak officials offered the repetition of the test, the Egyptian officers answered that 'all is clear' and returned to the UAR instead. Thus, the KLOKAN was not ordered by the Ministry of War, one additional reason apparently being the fact that the grenade launcher was not introduced into the inventory of the Czechoslovak People's Army.[42]

Meanwhile, however, the Egyptians reconsidered their investment policy and in 1965 the establishment of the optical plant and tank-engine factory was cancelled. At the same time, the requirement for the manufacturing capabilities of the gun factory was scaled down

substantially. According to the new demand, this facility was to be primarily capable of the production of mortars of Soviet origin and potentially other types of field guns, if some suitable type could be offered. Hence, during the negotiations in April 1967, the financial scope of the agreement was scaled down from 200 million CSK to 126 million CSK with the provision that the company Strojárske a metalurgické závody Dubnica nad Váhom would establish production of the vz. 38 120mm mortar (Czechoslovak licence of Soviet M1938) at the projected gun factory. As of 1 January 1967, the UAR paid 46 million CSK for the deliveries within the agreement from 15 March 1964.

In the end, the Czechoslovak prospects for the establishment of the Egyptian gun factory temporarily evaporated due to Egypt's financial difficulties following the Six-Day War.[43]

THE ACTIVATION

Beginning in 1958, the HTS was unable to secure any major arms deal with Egypt, mostly due to the inability of Prague to offer really modern weaponry. The same was true for the training of Egyptian military personnel. Between 1955 and 1963, Prague delivered military hardware to an overall value of 1.35 billion CSK to Egypt. In the same time frame, the Czechoslovak People's Army trained 474 Egyptian military specialists, including some 150 artillery technicians and approximately 160 pilots and aircraft technicians. However, from 1958 the Czechoslovak participation in these activities also diminished considerably since the UAR was able to train troops with its own military instructors, and the Military Technical College in Cairo was established – with Czechoslovak assistance – for university-educated officers.

Moreover, as commented upon in one contemporary Czechoslovak report: 'Positive developments in political relations were halted at the end of 1958 when the UAR government launched a fierce anti-communist campaign, which gradually grew into a campaign against the countries of the socialist camp.' Since the UAR was considered in Prague as one of the most important Non-Aligned Movement countries, the Politburo ÚV KSČ (during 1962 renamed to the Presidium ÚV KSČ) dealt with Czechoslovak-Egyptian relations in March 1962. The decision was to intensify mutual contacts in political, business, and cultural areas. However, the outcomes were very limited. At that time, the Egyptians complained about the poor quality of Czechoslovak products delivered to the ceramic factory at Mostorod or the fireclay factory at Sornaga. In the military sphere, the Ministry of War was deeply dissatisfied with the substandard artillery ammunition delivered from Czechoslovakia, as detailed above. Moreover, an internal report for the Presidium ÚV KSČ from January 1963 observed: 'Due to his political views, Nasser is [a] bourgeois nationalist, who is in favour of ensuring the national independence of his country. He has a clear anti-communist line in internal politics, harshly persecuting not only the Communists but all those who oppose the regime of military dictatorship.'

While some 1,000 Egyptian communists were sent without trial to quarries for forced labour, the communist leadership in Prague decided in December 1963 to invite Nasser for an official visit to Czechoslovakia, due to the new leftist course of the Egyptian government with the explanation that 'progressive measures in the UAR go beyond the traditional measures of states, not headed by the working class or the peasantry, and go beyond the national liberation, anti-imperialist and anti-feudal revolution'. In the same resolution from 17 December 1963, the Presidium ÚV KSČ approved the activation of political relations with the UAR with specific tasks for the Ministry of National Defence, mostly related to the activities of the Czechoslovak military advisors at the Military Technical College in Cairo.

Besides, the potential export of military hardware began to show positive expectations because the Czechoslovak arms industry commenced the production of new weaponry both under Soviet

Table 12: Czechoslovak arms export to Egypt, 1955-1964[45]

Type	Number of examples	Year of delivery	Note
binocular 6x30	4,180	1956	
binocular 7x50	1	1959	specimen
vz. 60, compass	4,000	1960	
VO-7, assault knife	4	1958	
vz. 44, 26.5mm signal pistol	205	1955	
	30	1963	
26.5mm signal round	10,800	1955	
	400	1956	
vz. 24, 9mm pistol	1	1957	
	154	1959	
vz. 38 N, 9mm pistol	826	1957	Czechoslovak designation of German Walther P38, additional 374 examples delivered from the stocks of the Ministry of Interior
vz. 52, 7.62mm pistol	1	1958	specimen
Sa 24, 7.62mm submachine gun	1	1958	specimen
vz. 38/40 N, 9mm submachine gun	3	1956	Czechoslovak designation of German MP 38 and MP 40
vz. 61, 7.65mm submachine gun	2	1964	
ZKM 451, 5.6mm rifle	1,000	1956?	
vz. 24, 7.92mm rifle	19	1961	
vz. 43 N, 7.92mm rifle	127	1958	Czechoslovak designation of German *Gewehr 43*
	501	1959	

Table 12: Czechoslovak arms export to Egypt, 1955-1964[45] (*continued*)			
vz. 52, 7.62mm rifle	27,500	1956	+ 3 specimens
	12	1957	
	1	1958	specimen
vz. 54, 7.62mm sniper rifle	1	1964	
vz. 58, 7.62mm assault rifle	1	1963	specimen
vz. 98 N, 7.92mm rifle	1	1958	specimen, Czechoslovak designation of German *Karabiner 98k*
vz. 52, 7.62mm light machine gun	1,320	1956	+ 1 specimen
	12	1957	
5.6mm round	5,000,000	1956?	
7.62mm round	2,520	1958	for pistol and submachine gun
7.62mm rimfire round	500,000	1956	
7.62mm training round	120,000	1964	
7.65mm round	70,000	1961	for vz. 27 pistol
	200	1964	for vz. 61 submachine gun
9mm round	50,000	1957	for vz. 24 pistol
vz. 43, 7.62mm round	1,120	1963	
vz. 47, 7.92mm round	30,450	1958	
vz. 48, 9mm round	300,000	1956	for pistol and submachine gun
	400,000	1957	
	9,120	1959	
vz. 52, 7.62mm round	81,000,000	1956	for vz. 52 rifle and vz. 52 machine gun
	60,000,000	1957	
	600	1958	
vz. 52, 7.62mm round with tracer	2,000,000	1956	for vz. 52 rifle and vz. 52 machine gun
vz. 34 N, infantry rangefinder 0.7 m	400	1956?	Czechoslovak designation for German *Entfernungsmesser 34*
RG-4, hand grenade	2,000	1955	
	1,900	1956	
T-21, bazooka	250	1955	
	650	1956	
round for T-21	12,500	1955	
	50,000	1956	
ROKS-3, flamethrower	400	1956	
propellant cartridge	400,000	1956	for ROKS-3
flammable fill	150,000 litres	1956	for ROKS-3
vz. 42 N, 120mm mortar	80	1957	Czechoslovak designation of German *Granatwerfer 42*
vz. 31/37, 122mm gun	38	1956	the Czechoslovak licence of M1931/37 (A-19)
vz. 38, 122mm howitzer	80	1955	the Czechoslovak licence of M1938 (M-30)
vz. 43, 57mm anti-tank gun	31	1955	the Czechoslovak licence of M1943 (ZiS-2), according to some sources 263 guns of this type were delivered
	138	1956	
	75	1957	
	12	1961	
	2	1962	
vz. 38/46, 12.7mm anti-aircraft machine gun	203	1956	the Czechoslovak licence of Soviet DShKM
vz. 53, 12.7mm quadruple anti-aircraft machine gun	20	1956	
	112	1957	
vz. 44, 85mm anti-aircraft gun	58	1956	the Czechoslovak licence of M1944 (KS-1)
	1	1962	
vz. 51, 130mm multiple rocket launcher	36	1956	

Table 12: Czechoslovak arms export to Egypt, 1955-1964[45] (*continued*)			
12,7-PZ, 12.7mm armour-piercing incendiary round	2,000,000	1956	
	1,386,000	1957	
12,7-PZSv, 12.7mm armour-piercing incendiary round with tracer	1,000,000	1956	
	3,114,000	1957	
120mm high explosive fragmentation round	58,000	1957	for vz. 42 N mortar
57-JO-PTK 43, 57mm fragmentation round	30,000	1956	for vz. 43 anti-tank gun
	10,500	1957	
	21	1958	
57-JPSv-PTK 43, 57mm armour-piercing round	90,000	1956	for vz. 43 anti-tank gun
	24,500	1957	
	51	1958	
85-JPSv-PLK 44, 85mm armour-piercing round	5,000	1956	for vz. 44 anti-aircraft gun
	12	1958	
85-JČ-PLK 44, 85mm time setting round	55,000	1956	for vz. 44 anti-aircraft gun
	111	1958	
130-JRRO-RM51, 130mm fragmentation rocket	66,820	1956	for vz. 51 multiple rocket launcher
different fuses	22,572	1962	
AST vz. 53, artillery periscopic telescope	100	1956	
PAB, artillery compass	140	1956	
TZK, anti-aircraft telescope	20	1956	
vz. 36, anti-aircraft rangefinder	400	1957	
PUAZO-4a, fire control director	14	1956	for vz. 44 anti-aircraft gun, from Czechoslovak licence production
T-34/85, medium tank	200	1955	from Czechoslovak licence production, delivered including 86 V-2 spare engines (30 in 1955 and 56 in 1956) and 4 spare guns (2 in 1956 and 2 in 1957)
	15	1956	
	75	1957	
SD-100, self-propelled gun	125	1956	the Czechoslovak licence of SU-100, delivered including 17 spare guns (13 in 1956, 3 in 1958 and 1 in 1962), engines identical with the T-34/85
85-JOF-TK 44, K 52, PLK 39, 85mm high explosive round	65,000	1955	for T-34/85 tank
	900	1958	
85-JPSv-TK 44, K 52, PLK 39, 85mm armour-piercing round	20,000	1955	for T-34/85 tank
	60	1958	
100-JOF-ShK 44, K 53, TK, 100mm high explosive round	50,100	1956	for SD-100 self-propelled gun
100-JPSv-ShK 44, K 53, TK, 100mm armour-piercing round	50	1958	for SD-100 self-propelled gun
MiG-15bis, fighter	80	1955	Czechoslovak designation S-103, from Czechoslovak licence production
	30	1957	
	10	1959	
MiG-15UTI, combat trainer	6	1955	Czechoslovak designation CS-102, from Czechoslovak licence production
	16	1957	
	15	1959	
L-60, liaison aircraft	10	1957	
Yak-11, training aircraft	25	1955	Czechoslovak designation C-11
	40	1957	
	20	1963	
	25	1964	five from the inventory of the Czechoslovak Air Force, the rest from the stocks of the Svazarm
Z-226T, training aircraft	50	1957	

Table 12: Czechoslovak arms export to Egypt, 1955-1964[45] (*continued*)			
N-37, 37mm aircraft cannon	10	1957	spare cannons for MiG-15bis
	10	1958	
NR-23, 23mm aircraft cannon	39	1957	spare cannons for MiG-15bis, from Czechoslovak licence production
OZT and BZT, 37mm HEI-T and API-T round	300,000	1956	for N-37 aircraft cannon
OZT and BZT, 23mm HEI-T and API-T round	1,550,000	1956	for NR-23 aircraft cannon
BD-3-53, bomb pylon	50	1958	for MiG-15bis
	30	1960	
external fuel tank, 400 litres	125 pairs	1958	for MiG-15bis, from Czechoslovak production
external fuel tank, 600 litres	20 pairs	1959	for MiG-15bis, from Czechoslovak production
PLK-45, pilot emergency parachute	50	1955	from Czechoslovak licence production
	20	1956	
	40	1959	
Raketa, pilot emergency parachute	100	1955	for MiG-15 pilots
	60	1957	
	100	1959	
PDK-42, cargo parachute	500	1956	
	4	1958	
PDMM-130, airborne container	4	1958	
PDBB-100, airborne container	24	1958	
pilot glasses	100	1958	
PCK-53, flight simulator	1	1959	
	1	1964 or 1965	
aircraft testing equipment	16	1958	
JAWA 350, motorcycle	250	1956	
Škoda 706 RO, bus	50	1956	250 vehicles were delivered in total
Tatra 111, truck	17	1956 or 1957	vehicles were used as artillery tractors for some of the delivered guns
Zetor 25, tractor	20	1956	ground support equipment for delivered aircraft
RM-31S, radio station	16	1956	
	60	1957	
RM-31T, radio station	18	1955	
	14	1956	
	70	1957	
TP-25, field telephone	3,000	1956	
	2,000	1957	
TÚ-11, field telephone exchange	435	1956	
	2,000	1957	
NS-600, charger set 600 W	260	1957	
NS-1250, charger set 1.25 kW	7	1956	
	5	1957	
RDG-2, hand smoke grenade	81,000	1963	
PT-Mi Ba, Bakelite anti-tank mine	250,000	1956	
PT-Mi Ba II, Bakelite anti-tank mine	5	1964	
PP-Mi Sk, anti-personnel shrapnel mine	12,500	1955	
	37,500	1956	
	250	1958	

Table 12: Czechoslovak arms export to Egypt, 1955-1964[45] (*continued*)			
PP-Mi Šr, anti-personnel shrapnel mine	12,504	1955	
	37,496	1956	
	250	1958	
	7,000	1963	
	5,466	1964	
PN-4, explosive block	1,000	1956	
	200	1958	
Náložka 75g, explosive block	250	1958	
RO-1, fuse	300	1958	
	2,000	1963	
RO-7/II, fuse	10	1958	
RO-8, fuse	400	1958	
	7,000	1963	
Rozbuška Ž, detonator	450	1956	
	500	1958	
	7,000	1963	
RK-1, capacitor exploder	50	1957	
	200	1960	
safety fuze	50	1956	
TN, linear charge (1.5 meters)	1,670	1955	
	5,000	1956	
	1,735	1957	
	100	1958	
	300	1963	
	170	1964	
M-52, mine detector	200	1956	
assault boat with Delphine outboard motor	15	1956	
Maska V 9x9, camouflage net	100	1956	
Maska T 12x12, camouflage net	100	1956	
Maska DD 9x13,5	100	1956	
Maska DA 18x18, camouflage net	50	1956	
barbed wire	400 tonnes	1956	
	110 tonnes	1957	
	230 tonnes	1958	
	40 tonnes	1959	
	220 tonnes	1960	
	15 tonnes	1962	
pickaxe	10,000	1956	
engineer shovel	18,000	1956	
field shovel	35,000	1956	
	2	1958	
military axe	2	1958	
PK-26, mobile field kitchen	200	1956	
tank lecture room	1	1957	
artillery lecture room	1	1957	
Tatra 805 and Praga V3S lecture room	2	1958	

licence and from indigenous development. The very first indication of a brighter future for the HTS deals flashed in late 1963 when the representatives of the Ministry of War requested a practical evaluation of the new OT-62 TOPAS armoured personnel carrier in Egypt. However, the first actual contracts for armament deliveries were signed only in the second half of the 1960s. Czechoslovak arms exports to Egypt from 1955 to 1964 are summarised in Table 12.[44]

5
DELFINS

In 1965, the officers from the headquarters of the UARAF turned to the Ministry of Foreign Trade requesting a proposal for the swift supply of 40 L-29 Delfin training aircraft, spare engines, and related spare parts. After lengthy negotiations with the Egyptian officials on price and terms of payment, the agreement was concluded in Cairo on 25 May 1966. The deal reached an overall value of 70.5 million CSK (3,476,500 GBP). Although the Egyptians demanded a credit payable in 10 years, the HTS representatives achieved terms of payment more favourable for Czechoslovakia. The last instalment was to be paid by 1 November 1972, with the advance payment of 6.5 million CSK (326,500 GBP) due to 1 September 1966. Because of their internal bureaucracy, the Egyptians 'prepaid' for deliveries of additional spare parts and other equipment in the framework of the agreement, since otherwise the UARAF would have had great problems in getting appropriate money for the acquisition of these components.[1]

Table 13: Agreement for the delivery of L-29 Delfin training aircraft and spare parts from 25 May 1966[2]

List of deliveries	Number of examples	Value
L-29 Delfin	40	2,160,000 GBP
M-701 spare engines, spare parts, training aids, and testing equipment	20	395,545 GBP
for additional contracts for deliveries of spare parts, training aids, testing equipment, TL-29 simulator, and general overhauls of M-701 engines	-	920,955 GBP
Total value		3,476,500 GBP

Together with the acquisition of the L-29 trainers, the UARAF requested the training of its instructor pilots and selected ground crews for this aircraft type. Hence, Contract No. 5267 was signed in Prague on 14 May 1966. The undertaking received the Czechoslovak cover name Course 259 and it took place at the 4th Aviation Training Regiment (*4. letecký školní pluk*) at Sliač air base. The Egyptian group, led by aircraft technician Colonel Saad Mohamed Tawfik Omran, was composed of six instructor pilots, six aircraft technicians (including Omran), four technicians for electrical equipment, two technicians for communication equipment, and two technicians for armament.

The training commenced for all specialisations on 20 June 1966 and lasted until 28 July 1966 for armament technicians and 27 August 1966 for all other ground crews including pilots. All six instructor pilots were classified as excellent after finishing the course. They flew a total of 150.58 hours (i.e. some 25 flight hours per pilot) during 496 flights. The pilots were trained to fly the L-29 by day and night under normal weather (VFR) conditions and to perform vertical and horizontal combat maneuvres while flying in a two-ship formation, air-to-air and air-to-ground attacks using a gun camera, as well as aerobatics at low, medium, and high altitudes.

During the final stages of the course, the training syllabus was changed slightly. Colonel Omran requested training flights with the Egyptian pilots seated in the back (instructor) seats of the aircraft. This step was taken to better prepare them for their future role as instructors on the L-29 Delfins. The ground crews were trained to carry out routine maintenance and technical inspections after 25, 50, 100, and 150 flight hours (i.e. regiment-level maintenance).

All 40 L-29 Delfin trainers for the UARAF were completed at the Aero Vodochody plant at Odolená Voda between June and December 1966. Following their test flights, they were dismantled and inserted into the crates for their railway and sea transport to the port of Alexandria. From there, the crates were moved to the nearby Dikhelia air base where factory technicians assembled the airplanes and the factory pilots then carried out their test flights that ranged to the border with Libya. The aircraft were introduced into the inventory of the Air Force Academy at Bilbeis.[3]

THE EXPANSION OF THE MILITARY TECHNICAL COLLEGE

In the mid-1960s, the MTC was a firmly established institution within the ranks of the Egyptian military educational establishment. However, the beginnings were not easy at all, especially for the principal Czechoslovak mentor – the VAAZ. Initially, some of the top Egyptian military officials had no clear idea about the MTC's future purpose and role. On the other hand, the VAAZ officers wanted to establish the MTC as a regular military-technical university from the very beginning. Moreover, other Egyptian high-ranking officers did not like the idea that the new college was to be established by a communist country. One contemporary Czechoslovak report summarised the situation in the early 1960s as follows:

> The commencement of the building of the MTC met with strong opposition from Cairo University and some representatives of the UAR Ministry of War, which was aimed at direct liquidation of the newly emerging MTC. The causes of this situation must be seen above all in the fact that these circles, in accordance with the prevailing social relations, felt threatened by the emergence of a 'competing' school and their fundamental disagreement with the content and methods of the work of the Czechoslovak experts that differed significantly from systems adopted from Western countries.

In the end, however, the Czechoslovak concept prevailed to a large extent thanks to the first MTC commander Brigadier Selim who was generally a strong supporter of the proposals from the VAAZ advisors. The definitive 'victory' came on 29 May 1962 when a decree of President Nasser accepted the MTC as a regular university. By the end of the school year 1962/1963, the groundwork of the organisational structure was laid with the establishment of 16 departments that provided the teaching of students in 14 specialisations. At the same time, equipping the college with necessary teaching aids was largely completed. Despite this success, there were still many deficiencies: "The most serious one is still a high percentage of failing students, small numbers of graduates, slow establishment of professorial staff, low prospects for work, low degree of work organisation, the inability to secure teaching

materials in the Czechoslovak Socialist Republic and poor quality supplies from the Czechoslovak Socialist Republic.'

Although the Czechoslovak assistance in the establishment and the expansion of the MTC was provided strictly on a commercial basis, from Prague's point of view the whole undertaking was financially not very lucrative. Indeed, for some time the HTS claimed that this 'operation is unprofitable'. However, there were aspects other than money as commented upon by one contemporary analysis of the Ministry of National Defence:

> Although the financial scope of this action in the year 1963 is expressed in the amount of 7.5 million CSK of trade parity, it is necessary to see the main importance of this undertaking primarily in the political field. By training military engineering and scientific cadres, we are given a unique opportunity to influence the thinking of officers who are intended to hold significant technical functions in the UAR Armed Forces and thus create the preconditions for further development of cooperation between the Czechoslovak Socialist Republic and the United Arab Republic.

Indeed, the political aspect of the assistance was integrated directly into Contract No. 40-66-32 which specified conditions for Czechoslovak-Egyptian cooperation in the establishment of the MTC. One of the contract's clauses exacted by Prague was an arrangement that without previous permission no party could seek assistance in the development of the MTC in other countries. However, this proved to be sometimes very problematic.

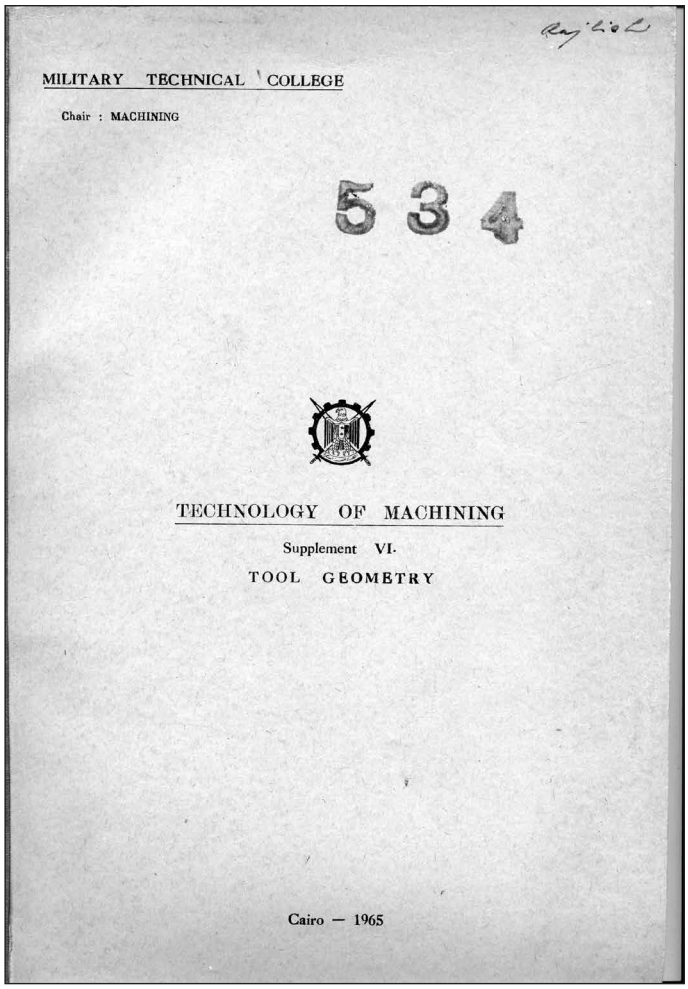
In 1962, the Egyptians asked the Czechoslovak officials to provide teaching at the MTC related to the latest Soviet weapon systems delivered recently to the UAR such as the T-54 medium tank, PT-76 amphibious light tank, MiG-19 and MiG-21 fighters, R-3S air-to-air missile, and SA-75 (NATO reporting name SA-2 Guideline) surface-to-air missile system. Hence, on 1 November 1962, Chief of the General Staff of the Czechoslovak People's Army General Otakar Rytíř sent a letter to Deputy Chief of the Staff of Warsaw Pact Forces, Army General Pavel Ivanovich Batov, with the request for confirmation if the mentioned types of weapons had really been delivered to the UAR and if the Czechoslovak experts at the MTC could provide related instruction. Following one urging, Batov answered in a letter from 7 January 1963 in which he stated that the SA-75, R-3S, and MiG-21, in comparison to the Warsaw Pact countries, were supplied in different subvariants and thus it would be more suitable to organise the teaching of the MTC students with the direct participation of Soviet instructors. At the same time, he confirmed that Moscow was ready to secure such an undertaking.

Major General Zuska was replaced in Cairo by Colonel Osvald Vašíček. Unfortunately, he did not reach the quality of his predecessor. (VÚA-SA AČR Olomouc via Milan Vyhlídal)

However, this proposal clashed with Czechoslovak political intentions. If such a scheme did materialise, Prague was afraid that the Egyptians would not respect the provisions of the contract and could turn to a third party that could provide further assistance for the MTC as well. 'It is very likely that this third party would be the Federal Republic of Germany, which is making great efforts to penetrate the armed forces and the military education system of the UAR.'

One of the crucial obstacles for the VAAZ related to the MTC was the complete Egyptian lack of long-term planning and the shortage of financial resources that severely complicated the organisation of the Czechoslovak assistance. Indeed, the latter factor invited

Numerous students from other Arab countries underwent courses at the MTC: this group were Syrians. (Jaromír Krejčíček via Milan Vyhlídal)


MILITARY TECHNICAL COLLEGE

Chair : MACHINING

534

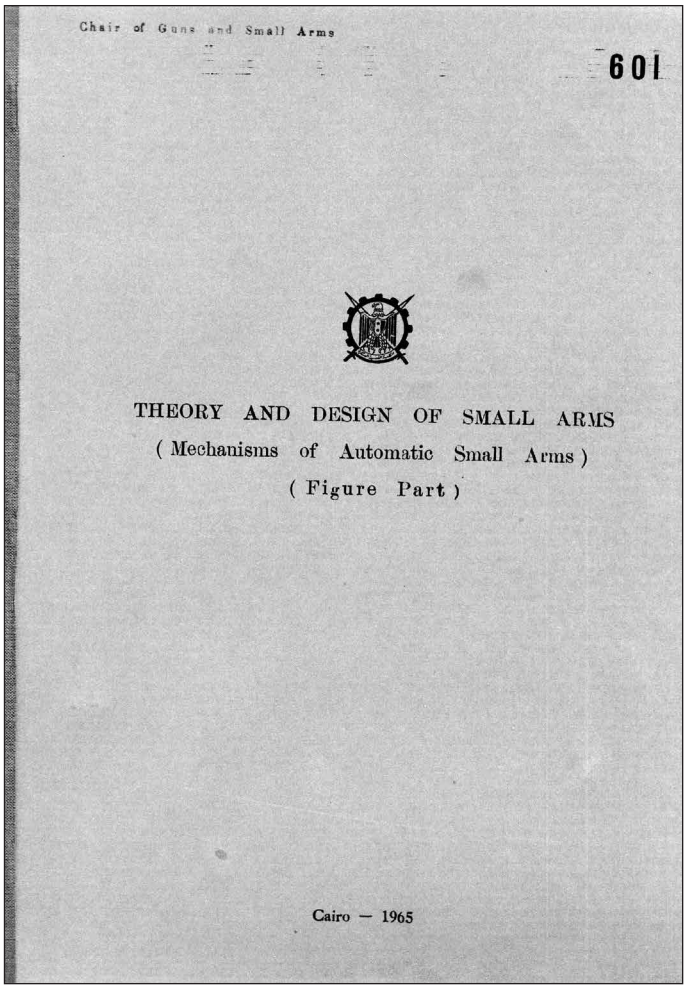
TECHNOLOGY OF MACHINING

Supplement VI.

TOOL GEOMETRY

Cairo — 1965

An internal publication by the MTC, related to defence technologies. (Jaroslav Rajlich via Milan Vyhlídal)


Chair of Guns and Small Arms

601

THEORY AND DESIGN OF SMALL ARMS

(Mechanisms of Automatic Small Arms)

(Figure Part)

Cairo — 1965

The pictorial part of the script dealing with the theory and construction of small arms, prepared by Captain Lubomír Popelínský. (Lubomír Popelínský via Milan Vyhlídal)

other countries to provide their experts under conditions more favourable for the Egyptians, as observed in the report of the chief of Czechoslovak advisors at the MTC Colonel Osvald Vašíček from January 1964:

> I recommend the attention to the fact that the Soviet representatives are also concerned about the development of expertise in connection with the offers of the Federal Republic of Germany, Japan, and China. Today's brief meeting with the Soviet military attaché in the UAR Hero of the Soviet Union Ryzhkov did not refute this impression, rather the contrary. The head of Soviet experts General A Pozharsky is in Moscow and it is not excluded that upon his arrival more favourable charges will be offered for experts in an effort to maintain the position, as it was two years ago.

At that time, almost the whole teaching staff of the MTC was composed of experts from the VAAZ, complemented by several external lecturers from Cairo University. Thus, during the school year 1963/1964, the MTC had 950 students in 14 specialisations and the teaching was provided by 22 external professors from Cairo University and 138 Czechoslovak experts (the heads of all 16 departments were Czechoslovaks). Hence, the personnel from the VAAZ carried out almost all of the teaching except for some theoretical subjects, drill training, and tactics.

However, the exceptionally low number of graduates still persisted – e.g. in June 1964, only 10 graduates completed the MTC. But the situation progressively improved thanks to the careful selection of the students, as observed in one Czechoslovak report from 1965: 'The MTC students (cadets) are selected from the best [of] Egypt's high school graduates. They are gifted, hardworking, and mostly very ambitious. They have the ability to learn a lot of stuff in a short time, but knowledge is not deep and therefore permanent. They have little ability of practical application of theoretical knowledge, little technical experience, and manual skills.'

At the same time, the Czechoslovak officers criticised the micromanagement of the MTC commander, Major General Selim:

> The organisational and management work at the MTC, carried out by Egyptian personnel, is at a relatively low level. The problem is that General Selim solves almost all problems practically alone, and the other management components are either not established or their role is severely suppressed. This could be aptly expressed by the sentence that the MTC is actually the school of General Selim.
>
> General Selim tries to make personal decisions about all the details of school life. He considers his advantage to know all students personally and to be able to predict their results during the exams. A similar effort to decide on every detail manifests itself in General Selim's other activities. This results in the consequences that General Selim is unable to fulfil all his tasks despite a great time effort (he works in the college every day until late at night) and that he has no time to deal with fundamental organisational and school issues.

Meanwhile, with Czechoslovak guidance the MTC gained a substantial reputation which was reflected in the commentary of Minister of Defence Field Marshal Abdel Hakim Amer who stated during the graduation ceremony in 1965 that the MTC 'had greater importance to the UAR than the Aswan Dam'. The graduation ceremony that took place on 25 April 1966 was attended by Egypt's top-level political and military officials including President Nasser who visited the college's premises and commented that the MTC should serve as an example for other Egyptian universities.[4]

Table 14: Czechoslovak advisors attached to the MTC, 1958-1966[5]

School Year	Semester	Number of Czechoslovak Experts
1958/1959	summer	15
1959/1960	winter	17
	summer	34
1960/1961	winter	51
	summer	58
1961/1962	winter	67
	summer	56
1962/1963	winter	79
	summer	86
1963/1964	winter	137
	summer	146
1964/1965	winter	141
	summer	148
1965/1966	winter	169
	summer	176
1966/1967	winter	178

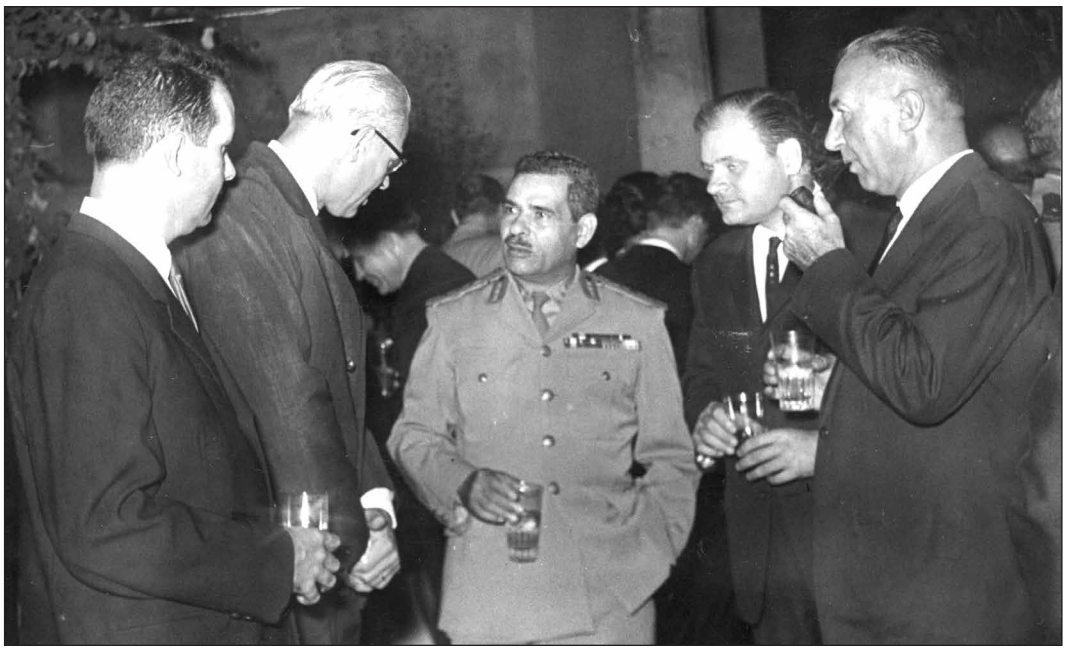
THE MAKING OF THE TEACHING STAFF FOR THE MTC

Despite obvious successes, some important shortcomings persisted. The commercialisation of the Czechoslovak military assistance on behalf of the MTC had a negative impact on the college's development. It was basically built according to the available funds and not to the actual requirements of the United Arab Republic Armed Forces. This situation was summarised in one of the Ministry of National Defence reports: 'The fact that the assistance at the development of the MTC is provided on a commercial basis is adversely reflected throughout the whole course of this help. The lack of funds to pay for services is an obstacle to the normal development of the MTC and a source of periodic tensions culminating during the signing of the contract for individual school years.' Contrary to this view of Czechoslovak officers, the HTS representatives were preoccupied with the making of money in the first place. Thus, during negotiations with Chief of the General Staff Colonel General Mohamed Fawzi in 1966, they demanded a 20 percent increase of rates for the Czechoslovak advisors attached to the MTC. Colonel General Fawzi considered this proposal as an unacceptable price increase 'that would necessarily result in a rate adjustment in the contract for 700 Soviet experts'. Besides, he added that insisting on this demand would lead to the situation in which Egypt would begin to seek help in another country.

The most fundamental shortcoming was the lack of vision in the development of the MTC. Initially, the graduates were to be practically prepared for service in different technical positions in the armed forces. This was later changed to the requirement that all graduates were to be educated for their future employment in the Egyptian arms industry. This, together with low cooperation with the troops, meant repeated adjustments to the principal teaching documents. This was accompanied by complaints from units that the knowledge of the graduates was too theoretical and not adapted for their practical service with combat formations. Thus, the leading officers of Egypt's armed forces exercised great pressure to change the role of the MTC which was to again be the preparation of technical officers for duty in the United Arab Republic Army.

Despite insufficient funds, the Ministry of War managed to expand the MTC to such a scale that it completely overstretched the personnel resources of the VAAZ not only in numbers but sometimes even in terms of specialisation. Thus, teachers of selected theoretical subjects from Czechoslovak civilian universities had to be dispatched to the MTC.

One of the primary objectives set for the VAAZ at the beginning of the establishment of the MTC was to train a sufficient number of Egyptians to create local self-sufficient teaching staff as soon as possible. For this reason, General Contract No. 52317 was signed on 28 May 1963. Although Czechoslovak representatives repeatedly reminded their Egyptian counterparts of this aspect, the MTC staff was completely unable to send a sufficient number of students to the VAAZ at Brno to attend corresponding studies in which the



A snapshot from the Czechoslovak People's Army Day reception on 6 October 1966. From left Lieutenant Colonel Iren Bartošek, Czechoslovak Ambassador to Egypt Mečislav Jablonský, MTC Lieutenant General M. I. H. Selim, interpreter Major František Hroník and the head of the Czechoslovak experts, Lieutenant General Jan Bělohoubek. (Iren Bartošek via Milan Vyhlídal)

Czechoslovak Ambassador Mečislav Jablonský greets President Novotný during his visit to Cairo on 13 November 1966. (Iren Bartošek via Milan Vyhlídal)

Antonín Novotný at a meeting with Czechoslovak citizens in Cairo. On his right is Lieutenant Colonel Iren Bartošek and Foreign Minister Václav David. (Iren Bartošek via Milan Vyhlídal)

graduates would obtain a doctor's degree (Doctor of Philosophy in Engineering) and which would prepare them for their future career of professors at the MTC. Between 1958 and 1966, just five students completed these studies. And what was worse, the MTC's top officers were unable to find some meaningful work for them since they were afraid of superior competencies and knowledge that the fresh doctor graduates attained at the VAAZ. One Czechoslovak officer commented about this situation as follows: 'I cannot get rid of the impression that General Selim sees the high qualification of these gentlemen as a serious danger to his sovereign position on the MTC.'

The low number of local lecturers was the primary reason for the long duration of the assistance that the VAAZ had to provide on behalf of the MTC and that was considered as unprofitable by the HTS. An additional 21 Egyptian students completed the doctor's program at Brno in 1967, most of them were subsequently appointed to the position of deputy heads of MTC departments. The HTS billed the Ministry of War 63,000 GBP (1.27 million CSK) for these services. However, on 1 March of the same year, Lieutenant General Selim ordered that this academic preparation (usually lasting around three years at the VAAZ) for future members of the MTC teaching staff must be conducted directly at the MTC under the guidance of Czechoslovak experts. The chief reason for this decision was that the costs were considered too high by the Egyptians. Nevertheless, the Egyptians continued to study for doctorates in Czechoslovakia even after the Six-Day War.

Regular MTC senior students were dispatched to Czechoslovakia to perform their educational stay lasting several weeks at selected Czechoslovak military factories, research institutes, and repair facilities before making their diploma theses. The experiences from one such undertaking organised in September and October 1966 were summarised in the report of the chief of Czechoslovak experts at the MTC:

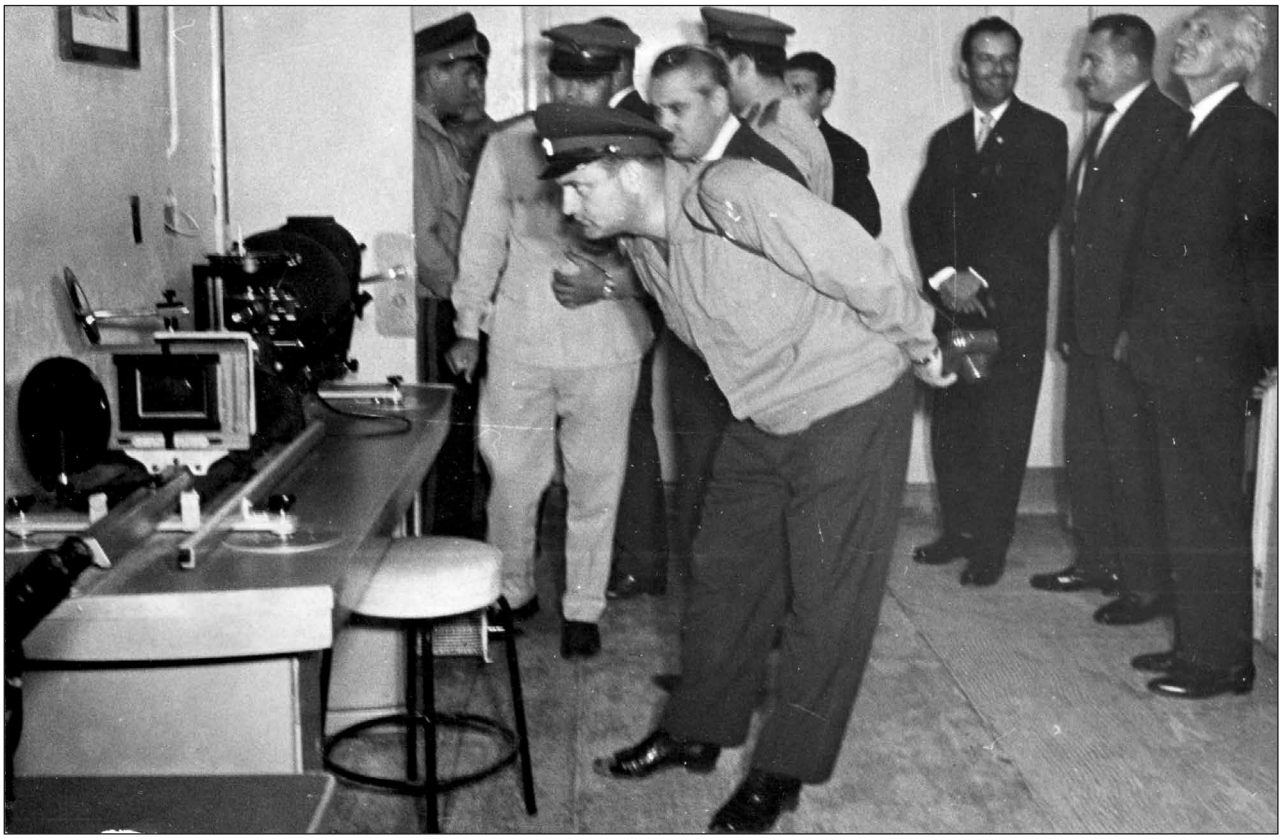
> The effectiveness of the practice was hampered by the low interest of the students. Often there was mostly the late arrival to the work as a result of the students' intense nightlife, and in some cases, the attention was reduced to a minimum due to the lack of sleep and hangover. There was a breach of safety regulations – students constantly ran away from the group, smoked at workplaces with combustibles, etc. The pitiful role was played here by Arab supervisors and Czechoslovak experts had to expend considerable energy to ensure discipline.
>
> […] As a result of students' indiscipline and, in particular, any sense of responsibility among Arab supervisors, there have been frequent changes, and in some cases, the military directorate had to pay a penalty for unused accommodation. Almost all hotels demanded additional compensation for the exceptional pollution of rooms.

Such an undertaking was conducted only twice, during the school years 1964/1965 (25 Egyptian students) and 1965/1966 (88 students).[6]

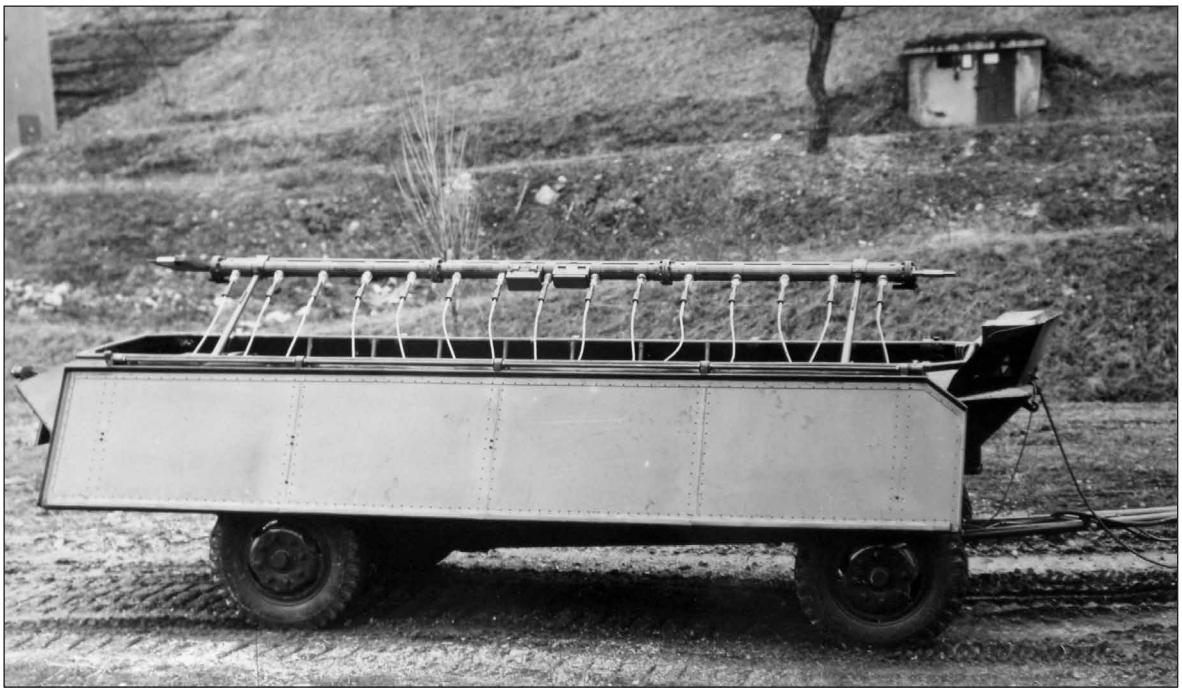
OFFICIAL VISITS BEFORE THE DISASTER

Meanwhile, the Egyptian economy ran into serious problems which in turn meant that the state treasury had insufficient funds to pay instalments for weapons delivered on credit, including those from

The MTC was never shielded from visits by top Egyptian officials. In April 1966, President Nasser visited the school. Visible to his left (and slightly to the rear) is his interpreter, together with Major František Hroník and Lieutenant General Jan Bělohoubek. On his right is the commander of the school, Lieutenant General M. I. H. Selim (Iren Bartošek via Milan Vyhlídal)



This photograph from October 1966 was taken during the visit of a Bulgarian delegation to the MTC. Visible on the right side is the head of the Department of Electrical Engineering, Professor Jan Hlávka. Next to him were Lieutenant Colonel Josef Smolík, and deputy commander for political affairs Lieutenant Colonel Iren Bartošek. (Iren Bartošek via Milan Vyhlídal)



A ROD-200 mine-clearing system on its transportation trolley. (VUH-VHA Praha)

On 30 November 1966, Algerian President Houari Boumedienne visited the MTC, together with a group of Egyptian officials. Lieutenant Colonel Iren Bartošek can be seen wearing the suit. (Iren Bartošek via Milan Vyhlídal)

President Antonín Novotný is welcomed by Egyptian representatives of the MTC during his visit to Egypt on 12 November 1966. Visible behind the Egyptian officers (in suit, to the right) is the contemporary head of the Czechoslovak experts, Lieutenant General Jan Bělohoubek. (Iren Bartošek via Milan Vyhlídal)

Antonín Novotný during the parade of the MTC Honour Unit. On his left hand sits Lieutenant General Selim and Deputy Minister of National Defence, Colonel General Vladimír Janko. (Iren Bartošek via Milan Vyhlídal)

On the occasion of the MTC visit, the school commander, Lieutenant General M. I. H. Selim presents a gift to President Novotný. Visible to the left of Lieutenant General Selim is Lieutenant General Bělohoubek. (Iren Bartošek via Milan Vyhlídal)

In early January 1967, an Egyptian delegation led by Colonel General Mohamed Fawzi, Chief of the General Staff of the Egyptian Armed Forces, arrived in Czechoslovakia. On this occasion, the members of the Egyptian delegation visited the premises of the VAAZ in Brno. (Univerzita obrany via Milan Vyhlídal)

the Czechoslovak-Egyptian arms agreement signed on 28 February 1957. Hence, on 27 June 1966, Czechoslovak Military and Air Attaché in Egypt Colonel František Sýkora was invited to the Chief of the General Staff Field Marshal Fawzi who informed him about Egypt's unfavourable economic condition and requested the postponement of instalments worth 10,600,000 GBP due for payment in 1966 until 1970 to 1972. At first, the HTS flatly refused such proposal and demanded repayment in time. This stance was supported by the Soviet Union that rejected any further postponements of payments since it already approved the postponement of instalments for military hardware worth 400 million roubles.

However, Czechoslovak representatives began to reconsider their original decision despite Moscow's resolute insistence that something like that was unacceptable, since all instalments for Soviet military hardware due for payment between 1963 and 1966 were already postponed until after 1970. Hence, a military delegation led by Field Marshal Fawzi arrived in Prague in January 1967 to discuss this issue. During negotiations with Czechoslovak and Soviet officials, business representative Panin from the Soviet embassy demanded all relevant payments for Soviet arms provided within the Czechoslovak-Egyptian arms agreement from 28 February 1957. In the end, the Presidium ÚV KSČ decided to accept the Egyptian plea and thus, on 10 January 1967, Field Marshal Fawzi was able to sign a protocol to postpone the Czechoslovak share of payments to the value of 9.54 million GBP (192.4 million CSK).

Fawzi used the visit to Czechoslovakia to discuss military matters, mostly additional assistance for the MTC, with the top-ranking

Captain Ivo Kameníček worked at MTC from 1967 to 1969 as a teacher of the Radar and Guidance Department. The 1967 photo shows him with his Egyptian students. (Ivo Kameníček via Milan Vyhlídal)

A photograph from April 1967 shows the Chief of the General Staff of the ČSLA, Army General Otakar Rytíř. On his right hand stands MTC commander Lieutenant General Selim. Between them stands the Deputy Chief of the ČSLA General Staff for Technical Affairs, Lieutenant General Miroslav Šmoldas. (Iren Bartošek via Milan Vyhlídal)

officers of the Czechoslovak People's Army and representatives of the HTS. The Egyptian delegation visited several Czechoslovak military training establishments such as the Antonín Zápotocký Military Academy in Brno, the Higher Military Training School (*Vyšší vojenské učiliště*) in Vyškov, and the Higher Aviation Training School (*Vyšší letecké učiliště*) in Košice. During the discussion with his Czechoslovak counterparts, Fawzi expressed interest in the acquisition of rocket-projected mine-clearing equipment that could be manufactured under licence in Egypt. Czechoslovak representatives wasted no time and offered not only the ROD-200 system but also the brand-new ROD-350 that was in the later stages of the development, with the systems presented under the English designations, MCT-200 and MCT-350 respectively.

Making use of Fawzi's invitation, the Czechoslovak military delegation led by Chief of the General Staff of the Czechoslovak People's Army Army General Otakar Rytíř visited the UAR between 3 and 14 April 1967. The top-ranking officers of both armed forces continued in the negotiations initiated in Czechoslovakia that were related mostly to the development of the Egyptian military educational system and possible deliveries of Czechoslovak engineer equipment including rocket-projected mine-clearing devices. However, the next Arab-Israeli war in June 1967 made an abrupt change in Czechoslovak-Egyptian military relations, especially in Egypt's renewed interest in massive supplies of military hardware from Czechoslovakia.[7]

The third leader of the Czechoslovak group of experts at the MTC, Lieutenant General Jan Bělohoubek. (VÚA-SA AČR Olomouc via Milan Vyhlídal)

Major General Mohamed Fawzi signs the visitors' book of VAAZ in Brno. (Univerzita obrany via Milan Vyhlídal)

6
LESSONS FROM A DISASTER

In the morning on 5 June 1967, the Israeli Air Force launched Operation Focus, a series of intensive air strikes that destroyed the majority of the Egyptian, Jordanian and Syrian Air Forces on the ground. This success led to the establishment of air superiority over the battlefields and significantly contributed to Israel's military victory in the conflict that became known as the Six-Day War. The course of the war and the catastrophic situation of the three Arab countries became the immediate impulse for the rapid convening of a meeting of the highest party and government representatives of the Soviet Bloc countries and Yugoslavia in Moscow on 9 June 1967, one day before the conflict's end.

First Secretary of the Communist Party of Czechoslovakia and President of Czechoslovakia Antonín Novotný informed the participants about the findings of the Military Committee of Defence ÚV KSČ (*Vojenská komise obrany ÚV KSČ*):

He said that even before the start of the aggression we had data on the state of preparedness of the armies of the Arab countries, based on information from the General Staff and the Minister of Defence who recently returned from these countries. According to their information, we knew that the leadership of the Arab countries lives in the idea that it can easily destroy Israel but the real situation in the army was far from adequate, especially as regards the system of command and state of readiness and combat preparedness of the Arab military. The actual course of events, which meant the complete collapse of the Arab armed forces, confirmed these our information.

Table 15: Czechoslovak emergency delivery of military hardware to Egypt immediately after the Six-Day War[5]

Type	Number of examples	Note
Sa 23 and Sa 25, 9mm submachine gun	300	dispatched on 6 August 1967
vz. 52, 7.62mm rifle	300	dispatched on 6 August 1967
vz. 43, 7.62mm machine gun	12	the Czechoslovak licence of SG-43, dispatched on 6 August 1967
vz. 48, 9mm round	3,000,000	dispatched on 6 August 1967
vz. 52, 7.62mm round	1,000,000	dispatched on 6 August 1967
7.62mm rimfire round	150,000	dispatched on 4 August 1967
P-27, light anti-tank weapon	36	dispatched on 6 August 1967
round for P-27	1,440	dispatched on 4 August 1967
vz. 52, 82mm mortar	12	
vz. 52, 85mm anti-tank gun	24	dispatched on 27 August 1967
82mm fragmentation mortar round	3,000	
85-JO-TK 44, K 52, PLK 39, 85mm fragmentation round	8,000	dispatched on 27 August 1967
85-JPSv-TK 44, K 52, PLK 39, 85mm armour-piercing round	6,000	dispatched on 27 August 1967
Medical set for battalion medical aid station	1	dispatched on 6 August 1967

Table 16: Agreement for the delivery of L-29 Delfin training aircraft and spare parts from 18 November 1967[7]

List of deliveries	Number of examples	Value
L-29 Delfin	70	3,780,000 GBP
M-701 spare engines	35	297,500 GBP
for additional contracts for deliveries of spare parts, training aids, testing equipment, TL-29 simulator, and general overhauls of M-701 engines	-	1,922,500 GBP
Total value		6,000,000 GBP

Despite these claims, Czechoslovak military intelligence was caught completely off guard and the Israeli offensive greatly surprised the top-level military and political officials in Prague. Even more disturbing for them was the immense scale of the breakdown of the Arab militaries.[1]

Czechoslovak advisors attached to the MTC, 178 men with their families, remained in Egypt during the conflict: 'The fact that Czechoslovak experts did not leave Cairo and were ready to perform their task according to the requirements of the MTC was appreciated by the Arab side.' However, not everybody evaluated it the same way and some advisors expressed their dissatisfaction with the absence of any feasible evacuation plan or that they had to stay and become potential victims in someone else's war. However, this was considered as a serious failure of the persons in question from the safety offices of the ÚV KSČ and the General Staff in Prague.

Hence, for the next time, a new rule was established for the selection of personnel for service in the Middle East: 'Not to send workers who can be expected to be indifferent and contemptuous of the Arab people's struggle for a better future in the spirit of socialism

A column of Tatra 138 trucks of the Egyptian Army, during the October 1973 Arab-Israeli War. (CIA Photo)

Jaroslav Rajlich worked at the Department of Machining between 1965–1967. This photograph shows him with a group of students of the third year at the MTC. (Jaroslav Rajlich via Milan Vyhlídal)

Visible on the right of this photograph is the head of the Czechoslovak experts, Lieutenant General Bělohoubek. On his right is one of his deputies, Lieutenant Colonel Miloslav Kabelka. (Miloslav Kabelka via Milan Vyhlídal)

and whose behaviour would not be in line with the principles of proletarian internationalism.' During the conflict, two civilian advisors demanded their immediate evacuation to Czechoslovakia. They were withdrawn after the end of the war to never return back to Egypt, together with two other 'troublemakers' with families.[2]

The chief of Czechoslovak experts at the MTC Lieutenant General Jan Bělohoubek sent some of his findings to Prague shortly after the end of the conflict:

> For information, I also mention a brief statement of Lieutenant Colonel Riad (the tankman) [from 3 July 1967]:
>
> • Soviet advisors are in small units of the UAR Armed Forces on the Suez Canal – they organise the defences there. They adapt the roads and thus the supply of ammunition, food, and water is secured.
> • In the fighting on Sinai, soldiers for lack of drinking water drank water from tank coolers and thus decommissioned the tanks.
>
> […] [Brigadier Ibrahim Galal, chief of engineer troops] said about Czechoslovak mines that Czechoslovak anti-personnel mines are working very well. Reportedly, anti-personnel mines are proving themselves in Port Fuad in the current fighting.
>
> […] He said there are many problems within the UAR engineer troops. In particular, he emphasised the problem of camouflage of aircraft and radar equipment and the problem of camouflage as a whole. Here I asked about the [camouflage] masks of aircraft, especially whether they were used with or without corner reflectors. After explaining the term, Brigadier Galal admitted that nothing like this had been used and that they did not even know it. As another problem Brigadier Galal mentioned the construction of roads in the desert. This worries them a lot, as does digging trenches in the sand. […] As another problem Brigadier Galal mentioned crossing of water obstacles.

In his next report, Lieutenant General Bělohoubek summarised the situation in the Egyptian military and at the MTC, as follows:[3]

> From a purely military point of view, the UAR Armed Forces have lost the first round [the Six-Day War] for two reasons:
>
> - complete unpreparedness of the commanders at all levels,
> - very poor combat training and failure to master combat hardware.
> - Arab soldiers, who never admit their guilt in anything, say it was a "duel of technology where better technology won".

In my opinion, this is very dangerous for us in the future because we are preparing commanders and teaching technology. We build the MTC according to the model of our VAAZ. So far, according to words. So far, according to the VAAZ scale, we are only preparing industrial professions here, i.e. engineers perhaps for repair shops and industrial plants but less well for troops.

[…] Czechoslovak experts at the MTC: a direct effect on build-up and training in units none. There is practically no access of experts to the units. […] The MTC, despite being a university, has no teaching of general tactics or tactics of military branches and logistics, even after eight years of its existence.

EMERGENCY SHIPMENTS AND NEW DELFINS

On 19 June 1967, Nasser's special envoy Ahmed Fuad met Antonín Novotný and both discussed the Egyptian intention to rebuild the United Arab Republic Armed Forces. Fuad demanded massive deliveries of *'as many modern military aircraft as possible, including pilots'*. When participating ÚV KSČ secretary Vladimír Koucký told him that most of the Egyptian pilots had survived, Fuad said

March of MTC students to open the 1968 semester. (Ivo Kameníček via Milan Vyhlídal)

Czechoslovak experts at a show to open the 1968 semester. Josef Vlasák, Luděk Anděra and Miloš Nečesánek are sitting in the front row from the right. Second from the left in the front row is the secretary of the head of the Czechoslovak experts, Major František Hroník (Ivo Kameníček via Milan Vyhlídal)

that in the next war, these Egyptian pilots would attack Israel, while the pilots from the Soviet Bloc would secure Egypt's air defence. However, such a proposal was completely unacceptable for the communist leadership in Prague. Instead, on 20 June, the Presidium ÚV KSČ approved immediate free of charge assistance for the United Arab Army in the form of delivery of armament for one anti-tank battalion and an infantry battalion together with medical equipment (as listed in Table 15). The overall value of the shipment was 24,616,120 CSK. Similar assistance was also provided for Syria.[4]

This largely political gesture of goodwill only foreshadowed new Egyptian demands for deliveries of large quantities of new armament that could be used for the rebuild of the shattered United Arab Republic Armed Forces. The first step in this development was the acquisition of an additional 70 L-29 Delfin jet trainers that were ordered within the framework of the agreement from 18 November 1967. The overall value of the deal reached 6 million GBP (290 million CSK). For this reason, an HTS delegation led by the general director, František Langer, visited Egypt between 8 and 19 November.[6]

In addition to the signing of the agreement, Czechoslovak representatives heard the request from Commander-in-Chief, Field Marshal Mohamed Fawzi, and Chief of the General Staff, General Abdul Munim Riad, for additional deliveries of arms worth 9 million GBP (435 million CSK) that would be provided on credit. The greatest demand was put on shipments of anti-aircraft weapons, additional L-29 trainers, armoured personnel carriers, amphibious vehicles, and Tatra 138 trucks. At the same time, Minister of Military Production Abd al-Wahhab Bishri submitted a request for verification of the possibility of assembly and later partial licence production of L-29 airplanes in aircraft factories which were built with the help of mostly West German experts, and which had no meaningful product to manufacture.

> The Czechoslovak delegation informed Minister Bishri about our possibilities and preliminary considerations and drew his attention to possible difficulties and relatively high financial costs associated with the implementation of this plan and the fact that it is necessary to anticipate the inefficiency of this production for the Egyptian side.
>
> Minister Bishri very openly explained the situation in the relatively large aviation industry, in which considerable investment has been made and which is very passive due to the non-use of existing capacities. The aim of the Egyptian side is not to make a profit for the assembly or production of L-29 aircraft, but to make use of existing capacity, manpower and to reduce ever-increasing losses.

The Czechoslovak government approved the licence production of L-29 trainers and their M-701 engines in Egypt on credit to the overall value of 8 million GBP (331 million CSK) on 18 July 1968. In December 1967, the Czechoslovak evaluation team visited potential manufacturing facilities in Egypt which were considered satisfactory for the potential production of trainers and engines. Moreover, this undertaking looked very promising from the Czechoslovak point of view since their production was to be terminated, according to the contemporary plans, in 1970. Hence, existing manufacturing and assembly jigs and other equipment could be sold to Egypt with minimum additional costs. However, such an enterprise never materialised.

Major General Oldřich Štangl. (VÚA-SA AČR Olomouc via Milan Vyhlídal)

The shipments of Delfins from Czechoslovakia continued until 1969 and thus the UARAF became the second-largest operator of L-29s in the world, after the Soviet Air Force, with 122 Delfins and eight TL-29 simulators delivered in total.[8]

ASSESSMENTS OF THE MTC EXPERTS

Meanwhile, on 5 March 1968, a teacher from the MTC, Colonel Ján Husík, had the opportunity to witness a large-scale exercise of the United Arab Republic Armed Forces that involved a mechanized division attack with a water-line assault-crossing against enemy defence prepared in advance. The infantry, in BTR-152 armoured

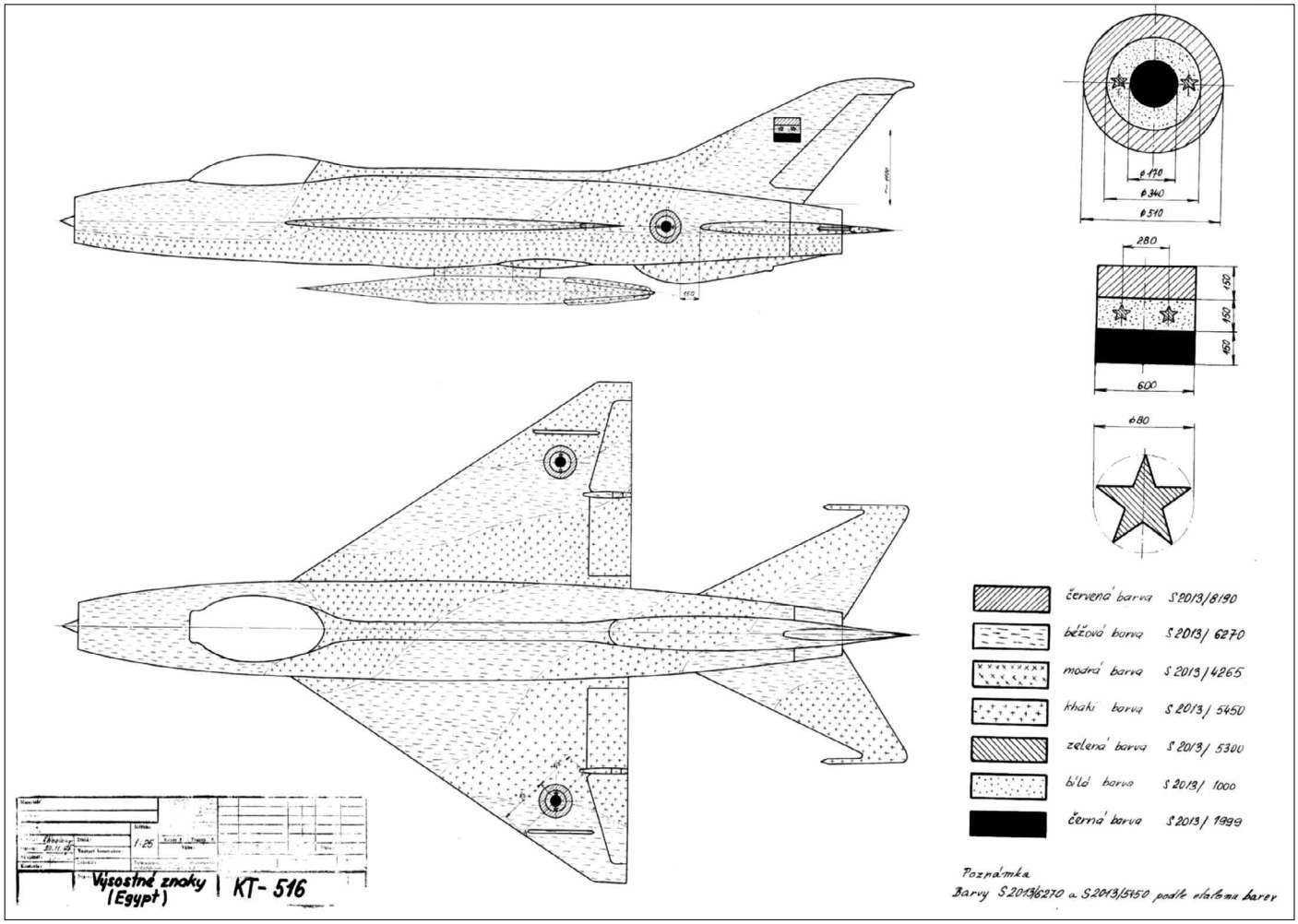
Egyptian students boarding at the ZF VAAZ in Brno. (Univerzita obrany via Milan Vyhlídal)

personnel carriers, were supported by T-34/85 and T-54 tanks and artillery. MiG-17, MiG-19, and MiG-21 fighters of the UARAF provided strikes against enemy positions while Mi-4 and Mi-6 helicopters transported two infantry companies to the beachhead. The exercise took place on the military range some 60km (37 miles) north of Cairo, and Colonel Husík provided the following assessment:

> I became personally convinced of the meritorious role of Soviet advisors in the troops and the appreciation of their work. The UAR units train according to the combat rules of the Soviet Army, which are gradually translated and issued. Soviet advisors are on average 40-45 years old, older ones are in higher staffs and the General Staff.
>
> […] During the exercise, I found out that in the positions at brigades and higher staffs there are a number of officers who graduated from the Soviet military academies.
>
> […] I learned from Soviet officers that until 5 June 1967, the UAR Army had not conducted a similar exercise in the past five years. Based on what I saw during the exercise, especially in the training of troops, the organisation of the work of staffs, and in the firm control of the fight, I state that the help of Soviet experts is very effective.

Also during the March, the MTC students together with their Czechoslovak teachers (Lieutenant Colonel Hájek, Lieutenant Colonel Huml, and Major Seitler) visited an armoured unit deployed near the Suez Canal:[9]

> On 29 March, an excursion of students of the 5th grade of the tank and automotive specialisation was organised and carried out at the 3rd Brigade of the 4th Armoured Division with the aim of getting acquainted with the activities of tank and automobile technology under combat conditions. The brigade is in a defensive position 10–14 kilometres [6–9 miles] from Suez. It is equipped with T-55 tanks. The students were acquainted with the combat deployment of the brigade, as well as with the combat materiel, maintenance plan, and materiel maintenance. The brigade has a Soviet advisor on tactics and combat employment and an advisor on technical matters. The influence of these advisors manifested itself in a very significant way both in the better preparation of the crews and in order and discipline. Technical readiness is at a good level, although this cannot be compared to the actual readiness of our [Czechoslovak] formations. From an interview with the Soviet technical advisor, it could be sensed that there is a significant lack of technically trained people in the units who would be able to improve and deepen the technical readiness and training of crews and workshop personnel.


Výsostné znaky (Egypt)
KT- 516
červená barva S 2013/8190
béžová barva S 2013/ 6270
modrá barva S 2013/4265
khaki barva S 2013/ 5450
zelená barva S 2013/ 5300
bílá barva S 2013/ 1000
černá barva S 2013/ 1999
Poznámka
Barvy S 2013/6270 a S 2013/5450 podle ofarbenia barev

Original painting instructions for the 30 MiG-21F-13s sold to Egypt in 1969 and delivered during that and the following year. Notable is the use of colours from the Czechoslovak colour standard. For a full reconstruction, see the colour section. (Aero Vodochody)

One of the MiG-21F-13s destined for Egypt in the process of disassembly prior to transport to its destination in 1969. When this photograph first appeared, back in the 1990s and early 2000s, it caused quite some confusion, because it was misinterpreted as showing a Syrian MiG-21, resulting in the widespread publication of wrongly-marked reference material. (Aero Vodochody)

7
1967-1973

Following the arrival of the HTS delegation back in Prague in November 1967, various Czechoslovak state institutions started to evaluate Egyptian demands for deliveries of military hardware. All were promptly turned down, which was confirmed in Resolution No. 243 of the Czechoslovak government from 18 July 1968. The primary reason was massive Egyptian indebtedness and the resulting danger that Cairo, with financial difficulties after the war, would be unable to pay instalments of Czechoslovak credits (as of May 1968, Egypt's indebtedness to Czechoslovakia amounted to circa 1.5 billion CSK, almost 50 percent of this sum came from the deliveries of weapons). Moreover, Prague was able to sell the same armament to other customers under more lucrative terms for its treasury. The refusal was officially justified to the Egyptian government by the capacity utilisation of the Czechoslovak arms industry for the needs of the Czechoslovak People's Army.

MIG-21F-13S FOR THE UARAF

However, the Ministry of War did not throw in the towel and pressed home its demands instead. The new request from early autumn 1968 was the delivery of up to 40 MiG-21F-13 fighters. These aircraft had so far been supplied for the UARAF by the Soviet Union (for one aircraft, Moscow billed Cairo 137,000 GBP on long-term credit). At that time, however, the Soviet aircraft industry no longer produced this variant and the Soviet Air Force did not have any surplus examples available for export. Therefore, Cairo turned to Czechoslovakia, which still produced the MiG-21F-13 under licence at Aero Vodochody. Then, there was a batch of 30 airplanes under construction that were originally intended for the Czechoslovak Air Force. However, the Ministry of National Defence did not get enough money to take over all 30 MiGs. Hence, 20 fighters were offered to the HTS for export. For this reason, on 28 November 1968, the Czechoslovak government delegation arrived in Cairo to discuss this matter in closer detail.

During the negotiations, the Czechoslovak side conditioned the supply of special material with counter-supplies of cotton in the amount needed to cover the needs of the Czechoslovak textile industry.

[…] On the other hand, the Arab side conditions the conclusion of an agreement for the supply of MiG-21F[-13] aircraft with a new requirement for the supply of at least 270 [OT-62] TOPAS tracked armoured personnel carriers and at least 30 MCT-350 mine-clearing systems.

The new demand put Prague under unpleasant pressure. From previous 'marketing research', the HTS officials were very well aware that the MiG-21F-13 was almost impossible to sell to any other foreign customer. Thus, Cairo became the sole Czechoslovak client willing to buy surplus fighters. Following the reluctant recommendation from the HTS, the Czechoslovak government approved the provision of credit to the value of up to 8.3 million GBP (343.7 million CSK) that could be used for the acquisition of not only the fighters but mine-clearing equipment as well. Since the MCT-350 (ROD-350) did not reach serial production, the ROD-200 rocket-projected mine-clearing system was offered instead.[1]

Following the government's Resolution No. 473 from 17 December 1968, Contract No. 1190023 for the delivery of 20 MiG-21F-13 fighter aircraft (including spare parts) was signed, probably on 22 December 1968. To comply with Egyptian insistence on the swift delivery, the first 10 examples were provided from the inventory of the Czechoslovak Air Force. While four MiGs manufactured in 1967 had already seen brief service within its ranks, the remaining six fighters were completed in late 1968 and early 1969 and had not even been officially taken over by the Ministry of National Defence.

However, the Ministry of War was still unsatisfied and thus, in December 1968, began to demand the delivery of an additional 10 MiG-21F-13s. Despite previous reservations, the HTS considered the sale of additional fighters, originally intended for the Czechoslovak Air Force, as economically favourable since the deal could create a financial reserve that would be used to cover planned deliveries of cotton and other goods from Egypt. Besides, there were some political aspects too. These were mentioned in a letter from the state secretary of the Ministry of Foreign Trade to the minister of national defence in which the former tried to persuade the latter to provide the required MiGs that were originally ordered for the Czechoslovak Air Force:

> The export would help to reduce the negative impression of our recent refusal of the requirement of the United Arab Republic to supply another special material and would help to expand

Table 17: Known Czechoslovak arms export to Egypt (without emergency deliveries after the Six-Day War), 1965-1969[4]

Type	Number of examples	Year of delivery	Note
vz. 61, 7.65mm submachine gun	50	1967	200 examples delivered up to 1971
7.65mm round	25,000	1967	
OT-62 TOPAS, armoured personnel carrier	270	1969	205 from the stocks of the Czechoslovak People's Army
L-29 Delfin, training aircraft	1966	40	currently known distribution of deliveries, altogether 122 L-29s and eight TL-29 simulators delivered up to 1969
	1967	14	
	1968	57	
	1969	8	
MiG-21F-13, fighter	30	1969	
PP-Mi Šr, anti-personnel shrapnel mine	25,135	1966	including RO-1 and RO-8 fuses and two-way connectors
anti-tank mine?	628	1965	exact type unknown (the source states the designation of the mine as PT-Mi Šv)
various fuses	35,000	1967	
TN, linear charge	3,000	1966	the delivery in 1966 apparently included some UTN-600 linear explosive blocks as well
	6,800	1967	
tent for 10 men	50	1967	
vz. 60, boots	1	1967	
BSS-Mo-4, gas mask	10	1967	
spare parts for BSS-Mo-4	812,200 CSK	1968	

economic cooperation between the Czechoslovak Socialist Republic and the United Arab Republic.

Colonel General Martin Dzúr approved the request in March 1969. Therefore, the supplement to the agreement from 22 December 1968 for the supply of an additional 10 MiG-21F-13 fighters was signed in Cairo in June 1969. The deal had a value of 5 million GBP (268 million CSK) and covered the delivery of not only the MiGs, but 100 SD-100 self-propelled guns, and 30,000 rounds of 100mm tank ammunition as well. However, the Egyptian demands for Czechoslovak MiGs were still not fully satisfied. Thus, during the meeting of the HTS business representative with Minister of War Field Marshal Mohamed Fawzi in Cairo in early December 1969, Fawzi demanded the additional delivery of any number of MiG-21F-13 fighters that could be supplied up to the end of 1970. However, no MiGs manufactured in Aero Vodochody were delivered to Egypt after 1969.[2]

Although no new supplies of Czechoslovak MiGs materialised, Czechoslovakia provided associated training for the Egyptian technical personnel from the aircraft repair plant at Helwan (Operation 8514). Thus, in the period from 15 July 1969 to 31 January 1971, the Czechoslovak Air Force Tactical-Technical Courses (*Takticko-technické kurzy*) at Zvolen and a section of the Higher Aviation Training School (*Vyšší letecké učiliště*), together with the Aircraft Repair Plant Kbely and the Aircraft Repair Plant Malešice were tasked to carry out training of four chief engineers and 99 technicians and mechanics for general overhauls of MiG-21F-13 fighters. The trainees were divided into the following specialisations: airframe, armament, electric equipment, radio equipment and onboard instruments, radar, airframe aggregates, engine and engine aggregates. This training bore Czechoslovak cover designation Course 307 and the Ministry of War was to pay for it 3 million CSK.[3]

CZECHOSLOVAK ARMOUR

Contract No. 31-9-14 for the delivery of 270 OT-62 TOPAS armoured personnel carriers was signed on 25 January 1969. Although the terms of the deal stipulated that all vehicles had to be newly built, due to the tight deadlines (the end of the deliveries on 30 October 1969) most of the OT-62s were taken from the stocks of the Czechoslovak People's Army and overhauled by the manufacturer Podpolianske strojárne Detva. Initially, it was planned to deliver 120 vehicles of the armed subvariant (OT-62) with mileage within 300 kilometres (186 miles) from regular combat units while the remaining 150 vehicles of the unarmed subvariant (OT-62A) were to be the oldest manufactured examples stored for the mobilisation establishment of the 16th Tank Division (*16. tanková divize*). However, such a scheme was flatly refused by the manufacturer since the OT-62As were so worn out that even after the overhaul, an expert would find out that they are not entirely new. Instead, the Federal Ministry of National Defence[5] provided 205 vehicles (120 examples manufactured in 1967 and 1968 with mileage under 300 kilometres [186 miles] and 85 examples with mileage under 600 kilometres [373 miles]), the rest came from new production. Although the provided vehicles were to be replaced within the ranks of the Czechoslovak People's Army from the early 1970s with newly manufactured OT-62 TOPAS armoured personnel carriers and later with BVP-1 infantry fighting vehicles, some senior officers were disgruntled with such massive deliveries of armoured vehicles from the military stocks: 'In the Czechoslovak People's Army one of the important tank formations was fully disarmed, and no one bears the responsibility that this formation will not be combat-ready until 1975 because the required compensation is not respected.'

However, the demands of the United Arab Republic Army were still not satisfied. Thus the Ministry of War requested further urgent deliveries of both new and old armoured vehicles together with ammunition. For this reason, Cairo was willing to accept terms of payment more lucrative for Prague. One hundred obsolete SD-100 self-propelled guns (together with 30,000 rounds of 100mm tank ammunition) were ordered in June 1969 within the supplement to the agreement from 22 December 1968 and delivered in 1970 (Contract 31-9-22). Before the shipment to Alexandria, the SD-100s

An Egyptian OT-62 captured by the Israeli Defence Forces during the 1973 Arab-Israeli War was later transported to the United States and evaluated here by the US military specialists. A T-21 bazooka is attached to the cupola. (US Department of Defense)

Czechoslovak-made OT-62s enjoyed a long operational service in Egypt. This example comes ashore from an LCU-1644 landing craft during an amphibious assault in support of the multinational exercise Bright Star '85. (US Department of Defense)

Jordanian soldiers attack the beach along with four OT-62s of the Egyptian Army during the amphibious assault phase of the exercise Bright Star 2000 held in October and November 1999 in Egypt. (US Department of Defense)

were overhauled at Repair Plant 026 (*Opravárenský závod 026*) at Šternberk.

The supply of 200 outdated T-34/85 tanks did not materialise since the Egyptians demanded all vehicles to be equipped with R-113 radio station (instead of the older Czechoslovak RM-31T), something that Prague was not able to fulfil: 'The possibility of importing these radio stations of Soviet origin and their installation was investigated, but the results of the negotiations showed that this problem can not be solved.' The HTS regretted this outcome because the tanks, instead of earning hard currency, were eventually scrapped due to their obsolescence.

In June 1969, the Ministry of War requested immediate delivery of 100 T-54A tanks, 100 T-55 tanks, 270 OT-62 armoured personnel carriers, and 50 DTP-62 armoured repair vehicles. Prague complied partially with those wishes. The T-54A tanks were not delivered at all. At the same time, the shipment of both types of TOPAS vehicles had to be postponed because their instant release from the stocks of the Czechoslovak People's Army would disarm two division-level formations (4th Tank Division [*4. tanková divize*] and 9th Tank Division [*9. tanková divize*]).

Following a resolution of the Czechoslovak government from 13 August 1969, an agreement was signed in Cairo on 4 December 1969 for the supply of 270 OT-62 armoured personnel carriers, 50 DTP-62 armoured repair vehicles, 100 T-55 tanks, 10 VT-55 armoured recovery vehicles, and 10,000 100mm rounds to the overall value of 863 million CSK (15.3 million GBP). The credit for 75 percent of the agreement's value was to be repaid in regular instalments between 1970 and 1974.[6]

The supply of 100 T-55 tanks was carried out within the terms of Contract 31-0-15/MC that was signed on 9 December 1969. The tanks came from the stocks of the Czechoslovak People's Army, primarily from units of the 13th Tank Division (*13. tanková divize*). Beginning early April 1970, the vehicles with a maximum mileage of 700km (435 miles) were transported to their original manufacturer, Turčianske strojárne at Martin, which performed their overhaul. The deliveries to the customer were to be completed up to 31 August 1970. However, this deadline could not be met since the last three tanks were delivered to Turčianske strojárne for refurbishment only in late September 1970.[7]

The Egyptian preparations for the next massive clash with Israel continued unabated. Therefore, in late November 1970, Minister of War Field Marshal Fawzi requested additional deliveries of 'special material' from Czechoslovakia for the period from 1 July 1971 to 30 June 1972, primarily 200 T-55 tanks and 220 OT-62 armoured personnel carriers. The overall value of the deal was expected to reach 20–25 million GBP (1.163–1.454 billion CSK). Unlike the previous agreement from 4 December 1969, Fawzi demanded payment concessions. Ideally, the terms of payment were to be identical to the Soviet ones (credit for 10 years only in a clearing, 2 percent interest rate, with a discount of 33 percent to 50 percent). The Federal Ministry of Foreign Trade warned that the current Egyptian dept in relation to Czechoslovakia is massive, circa 3.4 billion CSK, but due to Cairo's relatively smooth repayments, the Czechoslovak government and later the Presidium ÚV KSČ approved the delivery of the demanded number of tanks and armoured personnel carriers together with artillery ammunition to the overall value of 27 million GBP (1.571 billion CSK). The sum was to be paid for in a large part in goods in seven or eight instalments with an interest rate of 3 percent.[8]

Such terms of payments were traditional for the deliveries of Czechoslovak military hardware after the Six-Day War. The arms shipments from Czechoslovakia were usually made on a five- to seven-year credit with an interest rate of 3 percent per annum with 10 percent to 20 percent payment in advance. All payments were made within the framework of Czechoslovak-Egyptian clearing.[9]

INFORMATION FROM THE FRONTLINE

For its meeting on 14 January 1972, the Presidium ÚV KSČ received a secret report about the situation in the Egyptian Armed Forces along the frontline of the recent War of Attrition – the fighting between Israel and Egypt mostly characterised by large-scale shelling, extensive aerial warfare and commando raids along the Suez Canal:[10]

Czechoslovak experts visiting the Soviets on the occasion of the anniversary of the signing of the Treaty of Friendship, Mutual Assistance and Post-War Cooperation between Czechoslovakia and the USSR. From the left: Soviet Air Attaché, Lieutenant Colonel Iren Bartošek, Major General Ivan Pavlovich Goransky, *Assoc.* Alois Kursa and Lieutenant Colonel Ján Husík. (Iren Bartošek via Milan Vyhlídal)

The Ministry of War of the Arab Republic of Egypt, the Department of Moral Education, is sending in cooperation with the Ministry of Information some selected journalists to take part in lectures, talks, and discussions among officers and soldiers in the Suez-Ismailia front line on a tour lasting several days. This is not an isolated and sudden event, but a campaign that is supposed to last a longer time. This clarification campaign was organised because both political and military command felt the need to explain some key political issues, as organised political work in the military is at a very low level.

The findings of one of the participants show what is the political and moral situation in the Egyptian Army today, as he was among the soldiers and officers in December last year.

[…] Politics of the Soviet Union. For the most part, Soviet policy and the assistance provided are evaluated positively. […] At all meetings, questions arose as to why the Union of Soviet Socialist Republics, if it was such a great and selfless friend of the Arabs, did not want to supply the Arab Republic of Egypt with state-of-the-art weapons. [Soldiers and officers] contrasted the attitude of the Soviet Union mostly with the assistance of the United States of America to Israel, which receives the latest missiles and airplanes.

Despite the frequent positive appreciation of the work of Soviet military experts, he twice encountered the question of why the Soviet Union was sending low-skilled military experts to Egypt.

[…] The situation in the country. The soldiers at the front pay surprisingly close attention to the monitoring and critical assessment of the situation inside the country, life in Cairo, and other cities. It is generally criticised that life in cities, where nothing is known about the war, demoralises the military. The officers stated that it took them at least a month of education to correct the consequences of several days of holiday stay for soldiers in Cairo and inland in general. From the questions and opinions expressed, it was felt that the soldiers at the front did not want to accept this situation. They demand greater political and moral support and mobilisation of the rear. They blame not only military places, which should insist more strongly on the mobilisation and general readiness of the internal front, but also political places, that they are far from words to deeds. This situation calls into question the honest efforts and necessity of the suffering and sacrifice of soldiers on the front line.

Embodiment of normalisation among Czechoslovak workers at MTC – Colonel General Josef Vosáhlo. (VÚA-SA AČR Olomouc via Milan Vyhlídal)

After the death of President Gamal Abdel Nasser in September 1970, the new Egyptian leader Anwar Sadat started re-orienting the country toward the West. Although a friendship treaty was signed between the Arab Republic of Egypt and the Soviet Union on 27 May 1971, relations between both countries were declining. Meanwhile, Egyptian commanders regularly complained that Moscow refused to supply advanced weapons while Washington was providing such arms to Israel seemingly without any complications. The situation culminated in July 1972 when Anwar Sadat expelled Soviet military advisors from Egypt. The decision was the result of negotiations by Egyptian Prime Minister Aziz Sidki in Moscow. The Soviets then sent a detailed report about the meeting to the Czechoslovak Communists in Prague, which stated: 'We consider it necessary to continue cooperating with the Egyptian leadership.' Czechoslovakia had adapted to this viewpoint and thus the mission of the Czechoslovak military experts at the Military Technical College continued without any changes.[11]

In addition to deliveries of armoured vehicles, Czechoslovakia carried out the general overhauls of L-29 Delfins operated by the Egyptian Air Force. According to the contract AF 111-0009, the Aircraft Repair Plant Trenčín was to overhaul 10 aircraft annually in 1972, 1973, and 1974. The estimated value of the deal was 18,367 GBP (1,009,046 CSK). The trainers were transported to Czechoslovakia in a disassembled state aboard Egyptian An-12 transport airplanes and returned to the original owner in the same way. Following the arrival in Egypt, the technical team from Aircraft Repair Plant Trenčín and Motorlet (the engine manufacturer) performed the assembly of the aircraft and a Czechoslovak military pilot carried out the test flight.[12]

MTC Lieutenant General M.I.H. Selim with school officials at the parade. (Ivo Kameníček via Milan Vyhlídal)

EGYPTIAN MINISTER OF WAR IN CZECHOSLOVAKIA

From 5 to 11 October 1972, an official military delegation of the Arab Republic of Egypt, led by Deputy Prime Minister and Minister of War Colonel General Mohammed Ahmed Sadek, visited Czechoslovakia. During the first three days of the visit, he and his wife underwent a medical examination in a state sanatorium at Karlovy Vary. The remaining days of the stay were reserved for 'business as usual'. The Egyptian delegation visited two Czechoslovak arms production facilities together with the VAAZ and saw the presentation of the latest military technology manufactured in Czechoslovakia according to the wishes of Colonel General Sadek. Thus, the demonstration included the Tatra 813 tractor truck, OT-64 armoured personnel carrier, MT-55 armoured vehicle launched bridge, vz. 53/59 self-propelled anti-aircraft gun, 9M14 Malyutka anti-tank guided missile, and L-39 Albatros jet trainer.

During one of the negotiations, the HTS General Director and Deputy Minister of Foreign Trade František Langer asked Sadek about the reasons for the expelling of the Soviet experts since:

> our workers have a hard time understanding the reasons for Soviet advisors leaving the Arab Republic of Egypt and how we shall explain it to them. Minister Sadek said that he had distanced himself from President Sadat's decision to end the Soviet advisory mission to the Arab Republic of Egypt. He allegedly found out about it two hours before the announcement. He indicated that he did not consider this decision fortunate. He was willing himself to wait further for Soviet deliveries of aircraft. However, he insisted on deliveries of MiG-23 airplanes.

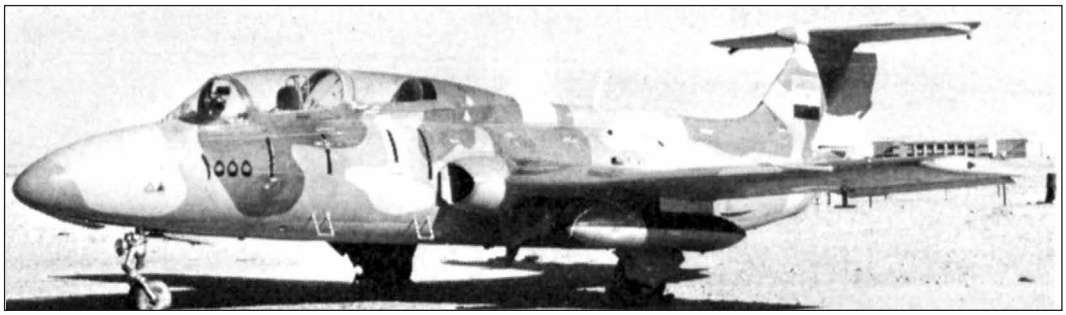
During several discussions with Minister of National Defence Army General Martin Dzúr, Mohammed Ahmed Sadek provided the following assessments of the Egyptian Armed Forces in general and the Egyptian Air Force in particular:[13]

> Our armed forces, land, air, and naval forces are ready. The enemy has complete superiority in the air force. We have a lot of MiG-21 airplanes and we use them wisely. The MiG-21s are usable in air defence, they have a short range. However, the enemy's air bases are far away. The enemy has about 450 modern aircraft that can reach any target in the Arab Republic of Egypt. Israeli planes can fly as far as Libya, Sudan, and other Arab states. MiG-21s can only fly to the border area. The Arab Republic of Egypt is under constant threat from the Israeli Air Force. This is a major problem for our armed forces.
>
> We need supersonic bombers, long-range fighter-bombers that could fight the Israeli Air Force and reach the Israeli bases.
>
> Soviet friends provided us with modern weapons for air defence. However, these systems cannot cover our entire country. Our airspace is open to aerial threats. Israelis can attack virtually any place in the Arab Republic of Egypt from the air. I do not have enough means to fight effectively.
>
> The second problem is the crossing of Suez in case we want to enter Sinai. We need airplanes for the support of ground troops. I can't ensure that if I don't have a long-range air force. Our problem is that we do not have sufficient air support. In a situation where the terrain is completely open, this is especially important. If we do not have the necessary air cover, we will have great losses in the event of a conflict. That is our main problem – the air force.

THE MTC AFTER THE SIX-DAY WAR

The second stage of the building of the Military Technical College commenced in 1967, which was approved in the resolution of the Presidium ÚV KSČ from 7 March of the same year. Thus, the subsequent period was characterised by the intensification of the scientific training of the Egyptian teaching staff with the help of the Czechoslovak experts, both directly in the conditions of the MTC, and in the form of postgraduate studies and full postgraduate studies in Czechoslovakia. The aim was clear – to finally make the MTC completely independent of Czechoslovak assistance, which was, after all, the primary objective set almost a decade ago.

However, this task created new challenges for Prague. Namely, in order to accomplish the job at hand, there was a need for the Czechoslovak personnel with the highest scientific and university



An L-29 of either No. 6 or No. 16 Squadron after the October 1973 Arab-Israeli War. Notable are the Nile Valley camouflage pattern and a drop tank installed on underwing pylon. For a reconstruction of this aircraft's colours, see the colour section. (Albert Grandolini Collection)

Table 18: Operation 98 – Czechoslovak emergency delivery of medical equipment from the stocks of the Czechoslovak People's Army to Egypt after the Yom Kippur War[17]

Type	Number of examples	Note
B-1, dressing material sterilised (for 100 wounded)	300 sets	dispatched from Prague-Ruzyně international airport on board a Boeing 707-366C (SU-AVX) on 27 October 1973
B-2, splints (for 50 wounded)	150 sets	dispatched from Prague-Ruzyně international airport on board a Boeing 707-366C (SU-AVX) on 30 October 1973
B-3, dressing material unsterilised (for 100 wounded)	300 sets	dispatched from Prague-Ruzyně international airport on board a Boeing 707-366C (SU-AVX) on 30 October 1973
V-1, rebandages for first surgical attendance	10 sets	dispatched from Prague-Ruzyně international airport on board a Boeing 707-366C (SU-AVX) on 30 October 1973
V-2, field tables for rebandaging	10	dispatched from Prague-Ruzyně international airport on board a Boeing 707-366C (SU-AVX) on 30 October 1973
oxygen bottle 40 litres – filled	350	first shipment of 200 bottles dispatched from the 1st Medical Base at Bystřice pod Hostýnem to Yugoslavia by train on 25 October 1973
oxygen bottle 40 litres – empty	50	dispatched from Prague-Ruzyně international airport on board a Boeing 707-366C (SU-AVX) on 30 October 1973

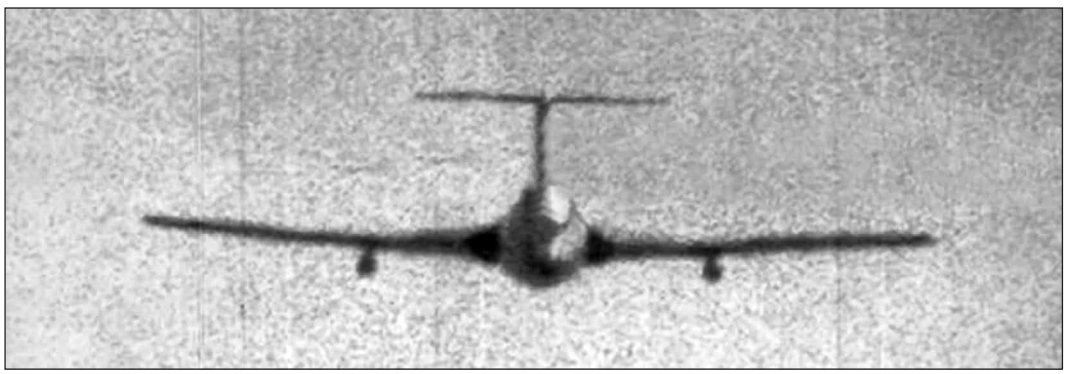
qualifications – something that went beyond the capabilities of the Foreign Faculty at the VAAZ that had so far provided almost all of the assistance to the MTC. The situation was further complicated by internal developments in Czechoslovakia. After the Warsaw Pact invasion in August 1968, new hard-line communist leadership came to power in Prague and commenced large-scale purges in the KSČ party organs, mass media, judiciary, social and mass organisations, security apparatus, and the Czechoslovak People's Army. The purges also affected a number of Czechoslovak teachers working at the MTC. Hence, from the early 1970s, one-third of the Czechoslovak experts dispatched to the MTC came from civilian institutions such as the Czech Technical University in Prague (*České vysoké učení technické v Praze*), Brno University of Technology (*Vysoké učení technické v Brně*), Palacký University Olomouc (*Univerzita Palackého v Olomouci*), and various institutes of the Czechoslovak Academy of Sciences (*Československá akademie věd*).

The process of selection of the teaching staff due to bureaucratic delays usually lasted about half a year. The whole matter lasted up to eight months, and yet the expert was appointed at the last minute. He often started teaching on the day of his arrival in Cairo. This did not make a good impression, especially with the Egyptian officials who could then have doubts about the professional qualities of the lecturers. The delays were caused, for example, by a necessity to check out prospective teachers for the MTC by the Military Counterintelligence (*Vojenská kontrarozvědka*) to establish if they were 'politically reliable'. This matter became more than acute after June 1969 when Lieutenant Colonel Jaroslav Plíhal, a member of the 3rd Faculty of the VAAZ and simultaneously teacher at the MTC, used the journey from a holiday in Czechoslovakia back to Egypt to defect and escape the restored communist oppression together with his family.

The commander of the Czechoslovak experts at MTC, Colonel General Josef Vosáhlo described the cooperation (probably around late 1968 or early 1969) with the Soviet advisors deployed to Egypt in his after-action report as follows:

> In agreement with the Soviet chief advisor – General Katyshkin, I organised workshops for advisors of arms branches and services with our chiefs of departments [at the MTC]. The Soviet comrades specified to us the existing and upcoming organisational structure, combat and support equipment supplied to the UAR and the principles of its use in the specific conditions of the battlefield.

Moreover, the Czechoslovak advisors at the MTC had the opportunity to feel the impact of the War of Attrition that was underway mostly along the Suez Canal from July 1967. The state of affairs changed in January 1970 when the Israeli Air Force launched Operation Priha – a series of airstrikes conducted by newly acquired F-4E Phantom IIs against targets in Egypt's heartland, including its capital. Therefore, in February 1970, the Czechoslovak teachers from the MTC took forced leave for security reasons. Due to the threat of aerial attacks, the Egyptians were seriously occupied by the idea of the possible relocation of the college. Colonel General



Czechoslovak arms in action in Egypt: on 23 October 1973, this Egyptian-operated L-29 attacked a column of Israeli military vehicles in the process of attacking a SAM-site west of Deverosoir. Associated Press photographer Horst Fass took the snapshot of the diving L-29 shortly before it opened fire with its two RB-57/4M pods for S-5M rockets. Reportedly, the jet was shot down shortly after. (via Tom Cooper)

Vosáhlo was consulted regarding this issue. Among other things, a proposal was made to use the premises of a civilian university, however, this proposition was not implemented in the end.

The number of students admitted to the first year at the MTC amounted to some 400 persons. Due to the ongoing War of Attrition, the Egyptian minister of war ordered the MTC to admit 600 students for the school year 1970/1971. Hence, the workload of the Czechoslovak and Egyptian teachers was enormous at these times.

At the turn of August and September 1972, just several weeks after Sadat's expulsion of Soviet military advisors from Egypt, the Czechoslovak military-business delegation visited Cairo to discuss the future of the Czechoslovak involvement at the MTC. Within the framework of the negotiations, the Draft Perspective Plan 1972–1976 was adopted, the aim of which was to create conditions for the further development of the MTC's departments and their gradual replenishment by Egyptian teachers. At that time, the Egyptians provided about 70 percent of the teaching. According to the perspective plan, in 1976, the Egyptians were to provide 80 percent of the teaching while the Czechoslovak advisors were to teach only in the newly introduced specialisations. Besides, the Czechoslovak and Egyptian officials agreed on a draft plan for further cooperation in the field of military education until the school year 1980/1981.

In late April 1973, Lieutenant General Jaromír Machač took over the position of the commander of the Czechoslovak experts at the MTC. Shortly after taking his office, he learned during a conversation with the MTC deputy commander Major General Ibrahim Abdel Nabi that the college was facing serious pressure. Nabi mentioned that the MTC was constantly criticised by the Egyptian military for insufficient implementation of research activities and practical development. The Czechoslovak officials interpreted these allegations as a display of possible preparations of the Egyptian Armed Forces and the college itself for a war. This suspicion proved to be more than correct some six months later.[14]

ASSISTANCE IN THE OCTOBER WAR

On 6 October 1973, Egypt – in conjunction with Syria – launched a surprise attack against the Israeli-occupied Sinai Peninsula and Golan Heights in an attempt to retake these respective Egyptian and Syrian territories that had been under Israel's control since the Six-Day War. During Operation Badr, the Egyptian Army crossed the Suez Canal, largely destroyed the Bar-Lev Line of Israeli fortifications, and advanced approximately 15km (9 miles) into the occupied Sinai Peninsula. Despite the initial success that astonished both Israel and the Arab World, the Israel Defence Forces managed to halt Arab advance on both frontlines and then launched a counteroffensive. Armed forces of both belligerents suffered immense losses in the process which initiated a series of Egyptian, Syrian, and Israeli pleas for urgent resupply of military hardware with their respective allied superpowers, the Soviet Union and the United States.

Military assistance for Egypt and Syria became an issue for Czechoslovakia as well. The Presidium ÚV KSČ, after advice from

An Egyptian T-55, knocked out near the Ismailia-Cairo road during the October 1973 War with Israel. (David Rubinger, Government Press Office)

Egyptian troops in the process of preparing a pair of 9M14 Malyutka anti-tank guided missiles for deployment. Visible to the rear is the missile operator with the control console and aiming periscope. (via Martin Smisek)

Moscow, approved the provision of free of charge 'internationalist help' for both Arab countries already in the middle of the fighting, on 12 October 1973. The weapons provided by Czechoslovakia were subsequently handed over to the Soviet Union which was to carry out their delivery to Egypt and Syria. However, Moscow decided to supply all Czechoslovak arms to Syria only. Thus, while Damascus received military materiel worth 193 million CSK or 387 million CSK in export prices (including one regiment of T-54A/T-54AR tanks and a squadron of MiG-21F-13 fighters), Cairo obtained just medical supplies upon a separate request. Similar military assistance was provided by other Soviet satellite countries: East Germany, Poland, Hungary, and Bulgaria.

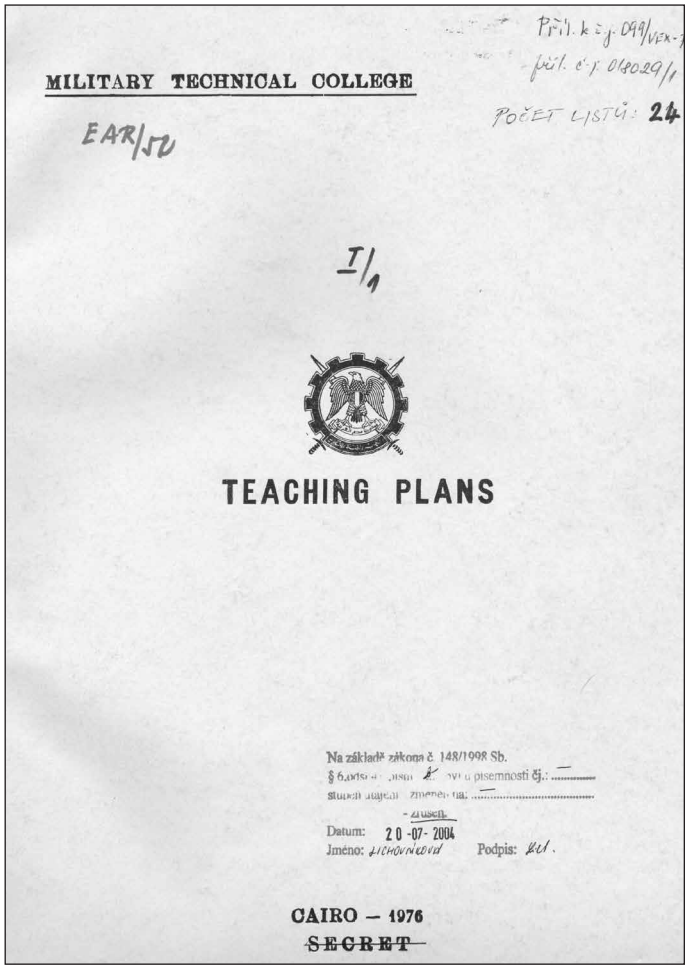
Understandably, the most important provider of the replacement arms for both Arab armed forces was Moscow:[15]

> According to unofficial information available, the Union of Soviet Socialist Republics provided expedited assistance by delivering special materials to the Syrian Arab Republic and the Arab Republic of Egypt on terms of 50 percent of the value for free, 50 percent for a 10-year credit and two percent interest, i.e. under the conditions under which it supplied also before the conflict. Other socialist countries such as the German Democratic Republic, the Polish People's Republic, the Hungarian People's Republic, according to unofficial information, provided assistance by supplying special materials free of charge as a gift from their governments, each about the same size as the Czechoslovak Socialist Republic.

Upon the request of the Egyptian ambassador forwarded to the Department of International Politics ÚV KSČ (*Oddělení mezinárodní politiky ÚV KSČ*), Czechoslovakia provided medical equipment to the overall value of 1.8 million CSK from the stocks of the Federal Ministry of National Defence and the Ministry of Health under Czechoslovak cover name Operation 98. According to the Czechoslovak military standards, provided material could be used for the treatment of up to 30,000 wounded. The share of the delivery from the warehouses of the Czechoslovak People's Army was worth 1,070,050 CSK and is listed in Table 18. The medical equipment was brought to Egypt on board a Boeing 707-366C airliner of EgyptAir and two merchant ships: *Jiskra* (200 filled oxygen bottles loaded in the Yugoslav port of Ploče on 4 November 1973) and *Canal El Sues* (150 filled oxygen bottles loaded in Yugoslav port of Rijeka on 27 December 1973).[16]

RENEWED ARMAMENT SHIPMENTS

Although Prague's immediate help was modest only, Cairo began to request urgent shipments of military hardware during the October War. Approximately one week after the outbreak of the conflict, Egypt's Minister of War General Ahmad Ismail Ali requested swift delivery of 200 T-55 tanks, 70,000 rounds of 100mm tank ammunition, 2,500 rounds of 152mm artillery ammunition together with 200 to 300 9K11 Malyutka anti-tank guided missile systems (each with 10 missiles). Upon the consultation with Senior Representative of the Commander-in-Chief of the United Armed Forces of the Warsaw Treaty, Colonel General Konstantin


MILITARY TECHNICAL COLLEGE

EAR/SU

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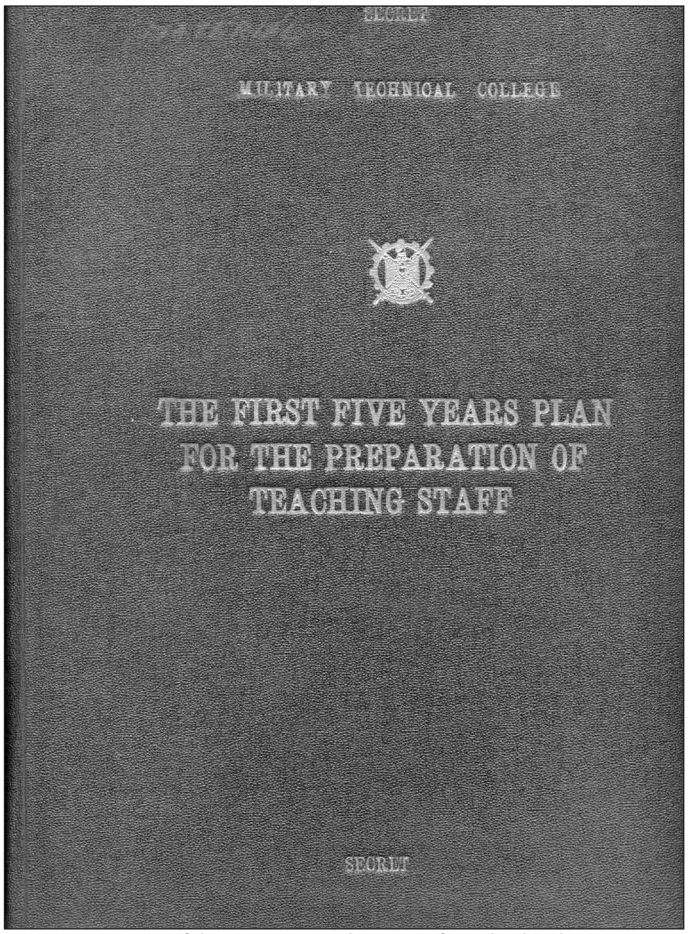
TEACHING PLANS

CAIRO – 1976

SECRET

Cover of the study plan for 1976. (VÚA-SA AČR Olomouc via Milan Vyhlídal)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MILITARY TECHNICAL COLLEGE

THE FIRST FIVE YEARS PLAN FOR THE PREPARATION OF TEACHING STAFF

SECRET

Many mementoes of the Egyptian involvement of Czechoslovak experts remain in the Czech archives to this day. Here, for example, is the cover page of the plan for the preparation of the Egyptian pedagogical staff of the MTC. (VÚA-SA AČR Olomouc via Milan Vyhlídal)

Grigorievich Kozhanov, Prague decided not to carry out any urgent supplies of armament to Egypt.

Egyptian demands for deliveries of tanks and 'any possible amount' of Malyutka missiles persisted into the post-war period. However, from Prague's point of view, the situation related to the arms shipments for Cairo became quite delicate due to previous intervention from Moscow. In the frame of the resolution from 12 October 1973, the Presidium ÚV KSČ provided Czechoslovak weapons for both Egypt and Syria. Instead, Soviet officials decided to supply all armament to Syria only. Based on an instruction from Prague, which was initially in the dark about this development, Czechoslovak Ambassador in Egypt Lumír Hanák informed senior Egyptian officials about the dispatch of military hardware as part of the requested assistance, but no weapons arrived. The Egyptian authorities evaluated the entire supply of armament from the Soviet Bloc countries and therefore asked Czechoslovakia to provide specific information on the reportedly provided military assistance, as they themselves had no information about these deliveries.

In light of this situation, and despite the massive Egyptian indebtedness, the Czechoslovak government approved the provision of new credit for Cairo's rapid acquisitions of Czechoslovak arms to the overall value of up to 19 million GBP (963 million CSK). The corresponding credit agreement worth 6 million GBP (306.8 million CSK) was signed in Prague on 19 December 1973. Provided finances were used for the purchase of 100 T-55 tanks (unit price 54,800 GBP), 10 VT-55 armoured recovery vehicles (unit price 58,000 GBP), and related spare parts. All newly manufactured vehicles were to be delivered between January and May 1974 respectively. The credit with an interest rate of 3 percent per annum was to be paid between 1974 and 1981. Since Prague met Egypt's demand for accelerated deliveries of tanks, the Egyptian side pledged to pay 15 percent of the total agreement in hard currency.

The Egyptian delegation, led by Deputy Minister of War General Gamal El-Din Mohamed Sidki, used the opportunity of its December stay in Czechoslovakia and during the negotiations with the Czechoslovak officials demanded the urgent delivery of the maximum number of Malyutka anti-tank guided missiles. If the Malyutkas could be delivered immediately, Cairo was willing to make the entire payment in cash in hard currency. This looked like a once-in-a-lifetime opportunity and Prague decided to comply with Egyptian wishes and provided requested materiel from the stocks of the Czechoslovak People's Army, although the Czechoslovak military had no surplus Malyutka missiles and associated equipment.

Thus, separate Contract No. 34-3-01 for the delivery of 160 9P111 missile launchers, 25 9S415 joystick control units, 10 11FG400 accumulators, and 800 9M14M anti-tank guided missiles to the overall value of 741,860 GBP (38.8 million CSK) was awarded on 19 December 1973 (at that time the Czechoslovak People's Army had 256 9S415 units and 5,610 9M14 missiles). The complete consignment was transported to Egypt from Prague-Ruzyně international airport on board three Egyptian Air Force An-12 transport aircraft on 29 December 1973.[18]

NEW DEMANDS FROM THE ARMS INDUSTRY

In the meantime, Egyptian authorities repeated their requests for Czechoslovak assistance in the expansion of Egypt's military factories. In late 1972, the minister of war requested the provision of credit to the value of 19 million GBP for deliveries of manufacturing machinery and other equipment for military production. The new credit was to ensure both the expansion of production in factories built in the past by Czechoslovakia (manufacturing of infantry weapons, fuses, large-calibre ammunition, aircraft external fuel tanks, etc.) and the construction of some new plants (together with securing of their manufacturing programs). In the case of the latter, the Ministry of War was interested in the production of armoured personnel carriers, a licence for L-13 Blaník trainer gliders, deliveries of semi-finished products and tools for production of 82mm and 120mm mortars, manufacturing of automatic assault rifles, fuses for artillery ammunition, anti-tank guided missiles, and shotgun ammunition. Besides, Egypt wanted Czechoslovak cooperation in the establishment of the gun factory, which was a project under the patronage of Moscow. Prague has promised to examine supply possibilities concerning the utilisation of the existing Czechoslovak production capacities. However, no one was in a hurry to provide an answer due to the considerable debt of Egypt.[19]

The last head of the Czechoslovak experts in Cairo in 1973 became Lieutenant General Jaromír Machač. (VÚA-SA AČR Olomouc via Milan Vyhlídal)

After the Yom Kippur War, the Egyptians reconsidered their previous requests and placed the top priority on the acquisition of new armament to compensate for losses suffered during the conflict. Correspondingly, on 29 November 1973, the Czechoslovak government, with Egypt's indebtedness in mind, approved assistance for Egyptian military industry only to the most necessary extent. In his letter from 13 January 1974, Minister of Military Production General A K El Badry asked for the continuation of negotiations on the provision of Czechoslovak assistance and credit in the further development of the Egyptian arms industry. During subsequent negotiations, the greatest importance was put on the new gun factory which was designed by the Soviets. For this facility, Prague was to deliver almost 600 machine tools, design the forge, and supply related forging machinery.

The next projects discussed were related to the expansion of the manufacturing capacity in the plant for the production of 23mm, 30mm, 37mm, and 40mm cartridges, the expansion of production of fuses and initiators, the expansion of production capacities for manufacturing of small arms (rifles and pistols), expansion of manufacturing of large-calibre ammunition, and introduction of licence production of Malyutka anti-tank missiles (on condition that Moscow provided licence rights). Besides, the Egyptians requested supplies of manufacturing machinery to supplement existing production lines in military factories. The total value of Egyptian demands reached about 13 million GBP (662 million CSK).

Table 19: Czechoslovak arms export to Egypt (without Operation 98), 1970-1974[3]			
Type	**Number of examples**	**Year of delivery**	**Note**
100mm tank ammunition	40,000	1970	newly manufactured
	23,000	1971	
	11,000	1972	
152-EOF-KH 37, 152mm fragmentation round	17,000	1972	from the stocks of the Czechoslovak People's Army
Dgtp and Nctp, smokeless propellant	630 tonnes	1970	from the stocks of the Czechoslovak People's Army
9P111, missile launcher	160	1973	part of 9K11 Malyutka portable anti-tank guided missile system, from the stocks of the Czechoslovak People's Army
9S415, joystick control unit	25	1973	part of 9K11 Malyutka portable anti-tank guided missile system, from the stocks of the Czechoslovak People's Army
9M14M, anti-tank guided missile	800	1973	part of 9K11 Malyutka portable anti-tank guided missile system, from the stocks of the Czechoslovak People's Army
T-55, medium tank	100	1970	from the stocks of the Czechoslovak People's Army
	20	1971	newly manufactured, altogether 520 T-55 and 10 T-55K tanks delivered up to the end of 1977
	180	1972	
	100	1973	
	100	1974	
VT-55 (VT-55KS), armoured recovery vehicle	10	1974	newly manufactured, altogether 22 VT-55 armoured recovery vehicles delivered up to the end of 1977
SD-100, self-propelled gun	100	1970	from the stocks of the Czechoslovak People's Army
OT-62 TOPAS, armoured personnel carrier	131	1971	currently known distribution of deliveries of newly manufactured vehicles, 540 OT-62 armoured personnel carriers and 50 DTP-62 armoured repair vehicles delivered up to the end of 1971; altogether 810 OT-62 vehicles of various modifications were delivered to Egypt up to the end of 1972
	217	1972	
M-701, jet engine	25	1972	spare engine for L-29 Delfin, newly manufactured
various aircraft bombs (TLP and OFAB)	1,512	1970	from the stocks of the Czechoslovak People's Army, altogether 7,512 TLP and OFAB bombs delivered up to the end of 1971
PP-Mi Šr, anti-personnel shrapnel mine	50,000	1972	from the stocks of the Czechoslovak People's Army
	40,000	1973	
PT-Mi K, metal anti-tank mine	84,500	1972	from the stocks of the Czechoslovak People's Army
	88,160	1973	
	50,000	1974	
Nálož̌ka 400g, explosive block	62	1970	from the stocks of the Czechoslovak People's Army
D-200, exploder	20	1970	from the stocks of the Czechoslovak People's Army
TN, linear charge	10,000	1973	from the stocks of the Czechoslovak People's Army
ROD-200, rocket-projected mine-clearing line charge	50	1969?	from the stocks of the Czechoslovak People's Army, probably delivered with 20 trailers
	50	1970	

The originally lukewarm attitude of the Czechoslovak authorities to Egyptian requests had changed in light of recent price rises of raw materials and food. Cotton and yarn became more expensive by 150 percent, rice even by 600 percent. At the same time, the supply of these very commodities was the main way in which Cairo repaid the deliveries of Czechoslovak weapons and the provision of military assistance. Thus, in the face of these events, Egyptian indebtedness in the long-term perspective suddenly did not look so huge (as of late 1974, Cairo owed Czechoslovakia altogether 4.2 billion CSK). Since Prague wanted to continue with the intake of these goods, on 13 June 1974 the Czechoslovak government approved the provision of a 10-year credit to the maximum value of up to 13 million GBP that was to be used for Egyptian acquisitions of Czechoslovak machinery and other equipment for local arms production.[20]

A corresponding credit agreement worth 12.5 million CSK (502 million CSK) was signed on 7 October 1974. Within the frame of subsequent contracts, Czechoslovak companies delivered machine tools and other manufacturing machinery for the gun factory and military plants producing small arms and artillery ammunition. Even though the supplies were intended for the military factories, some of the machinery was used to expand their civilian production, such as devices for the manufacturing of propane and butane bottles, screws, and nuts.[21]

8
THE SPLIT

Despite promising prospects of further military cooperation between Prague and Cairo, this activity came to a sudden end upon instructions from Moscow. After the Yom Kippur War, the decline in the relations between Egypt and the Soviet Union not only continued but even deepened. At the end of 1975, the Ministry of Foreign Affairs of the Union of Soviet Socialist Republics sent 'the Message' to the Soviet Bloc countries, except for Romania, containing Moscow's views on relations with the Arab Republic of Egypt. According to Soviet information, in late 1974 Egypt suspended, without any explanation, the repayment of all financial obligations for the supply of military hardware. Moscow reacted to this situation early in the following year and initially limited the shipments of contracted weapons. However, as a result of an escalating anti-Soviet campaign and Egyptian unwillingness to discuss the issue of repayments, it completely stopped the deliveries for political reasons in the second half of 1975. Nevertheless, the Soviet Union kept service teams in Egypt primarily to maintain armament under warranty. At the same time, Soviet advisors remained at the Nasser Military Academy.

However, Moscow's tensions with Cairo very quickly became a matter for almost the complete Soviet Bloc. The Soviet leadership demanded the suspension of military shipments from its satellite countries including Czechoslovakia. During negotiations of the HTS director František Langer with his Soviet counterparts in Moscow in February 1976:

> the need to halt the supply of special material and the coordination of action by other socialist states was stressed by the Soviet side. The Deputy Prime Minister of the Czechoslovak Socialist Republic, comrade Rohlíček, was informed about the meeting by letters dated 20 February and 2 March this year, as a result of which it was decided to suspend supplies of military hardware and spare parts regardless of contractual obligations, but, similarly to the Union of Soviet Socialist Republics, to continue in technical assistance, particularly by the participation of Czechoslovak experts in the completion of the Military Technical College in Cairo and the training of the Egyptian experts in the Czechoslovak Socialist Republic; at the same time it was decided to consult again with the Union of Soviet Socialist Republics the issue of relations with the Arab Republic of Egypt.

The tensions in Soviet-Egyptian relations culminated on 15 March 1976 when Anwar Sadat abrogated the friendship treaty with the Soviet Union. At the next consultation of Czechoslovak officials in May 1976, Soviet representatives:

> emphasised the validity of the Soviet position and informed about the note, which was to be handed over by the Ambassador of the Union of Soviet Socialist Republics comrade Matskevich to General Secretary of the Communist Party of Czechoslovakia comrade Husák in the following days. The note was to express the expectations of the Soviet party that the Czechoslovak party will continue to proceed in unison with the Union of Soviet Socialist Republics in matters of supplies of military hardware to the Arab Republic of Egypt. In particular, the note is intended to emphasise that the Soviet side does not consider it possible to carry out supplies of tanks and spare parts, which the Arab Republic of Egypt seeks to obtain from other socialist countries as well.

The mention of the tanks reminded the Czechoslovak leadership in Prague of the last important arms deal between communist Prague and Cairo. After the cessation of supplies of military hardware from the Soviet Union, the Ministry of War turned to the Czechoslovak HTS with a request for the supply of new tanks. In order to persuade Czechoslovak officials, Egyptians offered very interesting conditions of payment (only in hard currency with a 25 percent down payment). Prague did not hesitate and Contract No. 31-6-42 for the delivery of 220 vehicles of the T-55 series including spare parts to the overall value of 658.6 million CSK was signed on 18 August 1975. However, upon pressure from Moscow, Prague unilaterally terminated the contract notwithstanding that the Egyptians had provided the down payment exactly according to the contractual conditions. In the end, the amount paid in advance was used to purchase 20 T-55 tanks, 10 T-55K command tanks, and 12 VT-55 armoured recovery vehicles, which were all delivered in 1977.

The second most important deal of that time was related to the general overhaul of 43 M-107 jet engines for L-29 Delfin trainers. However, its overall value was just 5 million CSK. In August 1976, there were 23 power plants in Czechoslovakia, the repair of which was paid for in advance. From this number, 12 M-701s had already been refurbished. The remaining 20 engines were being prepared in Egypt for shipment to Czechoslovakia.

Moscow's demands put the Czechoslovak state leadership into an awkward position. Czechoslovakia had no legal (or any other) reason to suspend the fulfilment of its contractual obligations because Egypt fulfilled its obligations to Czechoslovakia on time and within the set deadlines. This situation was exacerbated by the fact that the Arab Republic of Egypt was simultaneously the then largest trading partner of the Czechoslovak Socialist Republic in developing countries. Thus, from the Czechoslovak point of view, the settlement of Soviet accounts with Egyptians caused Czechoslovakia only losses – strained diplomatic relations and problems in economic cooperation with Cairo.

However, instructions from Moscow could not be called into question. Hence, the Czechoslovak government in its Resolution

Table 20: Czechoslovak advisors attached to the MTC and postgraduate studies of MTC students in Czechoslovakia, 1967-1977[6]

School Year	Number of Czechoslovak Experts at the MTC	Postgraduate Study of Egyptian Officers in Czechoslovakia (1–2 Years)	Regular Postgraduate Study of Egyptian Officers in Czechoslovakia (3 Years)
1966/1967	202	21	21
1967/1968	191		
1968/1969	154		
1969/1970	157		
1970/1971	171		
1971/1972	164		1
1972/1973	172		
1973/1974	168	4	1
1974/1975	149	3	36
1975/1976	75		16
1976/1977	29	9 (7 students recalled prematurely to Egypt)	76 (73 students recalled prematurely to Egypt)

No. 205 from 26 August 1976 decided to halt all arms shipments to Egypt, to limit the deliveries of manufacturing machinery to Egyptian military factories to only civilian equipment (almost all machine tools that were supplied to these facilities had a civilian character), and to continue in the expert assistance at the MTC and the training of MTC teaching staff in Czechoslovakia. This stance was endorsed by the Presidium ÚV KSČ just several days later, on 3 September 1976. Other Warsaw Pact states followed Soviet orders too and thus countries such as East Germany, Poland, and Hungary stopped military supplies to Egypt as well.[1]

Prague was expecting some kind of Egyptian retaliation but at the same time was hoping that something like this would not happen. However, the fears of the Czechoslovak communists came true in August 1977 when Sadat ordered a stop to the payment of instalments for the delivered military hardware and banned the export of cotton to Czechoslovakia and the Soviet Union as a retaliatory measure for non-fulfilment of arms supplies. At that time, cotton accounted for 60 percent of Czechoslovak imports from Egypt.[2]

FINAL YEARS AT THE MTC

The first Czechoslovak advisors assigned to the MTC for the school year 1973/1974 were arriving in Cairo in early October 1973, at a time when the Egyptian Armed Forces were on full alert. Although airline flights between Prague and Cairo were interrupted because of the Yom Kippur War, the Egyptian minister of war insisted that teaching in the fourth and fifth years at the MTC must begin as early as 13 October 1973. However, almost a third of Czechoslovak experts were not present in Cairo. The duties of the missing pedagogue as well as the Egyptian officers, who were dispatched to the frontline, were quickly taken over by the present Czechoslovak teachers. In the meantime, it was decided to evacuate wives and children of the Czechoslovak advisors, at first by buses to Alexandria and then by Soviet ships to Bulgaria.

Immediately right after the end of the Yom Kippur War, the Czechoslovak advisors suggested that the MTC should be provided with the latest armament, which was used in conflict by both the Egyptian Armed Force and especially by the Israel Defence Forces. The proposal was officially justified by the need to modernise practical teaching at the college. In fact, this was just a Czechoslovak pretext to lay hands on the modern US military hardware used by the Israelis that was captured by the Egyptians during the fighting. Even the commander of the Czechoslovak experts at the MTC, Lieutenant General Jaromír Machač, intervened in this matter with the Egyptian Minister of War Marshal Ahmad Ismail Ali. However, it remains unknown if this Czechoslovak activity bore any fruit.

On the night from 17 to 18 April 1974, the MTC was subjected to an armed action by Islamic fundamentalists when members of the Islamic Liberation Party attempted to stage a coup in its premises. With taking control of the college, they expected a similar response in other parts of the country. In the end, during their unsuccessful night attack, one of the cadets murdered two of his classmates and one duty officer was seriously injured.

Sadat's pro-Western and pro-American orientation began to be reflected in the personnel selection of the top officers within the Egyptian Armed Forces. Neither did the MTC escape extensive changes. Thus, on 13 February 1975, the college's first commander Lieutenant General Mohamed Ibrahim Hassan Selim became the advisor to the minister of war on issues of the arms industry. Other high-ranking officers were sent into retirement. Major General Shawki Sharif, who previously studied in Great Britain and the United States and had several years of teaching experience, was appointed as the new commander of the MTC. With the new leadership, the change in the information flow became apparent. Despite the still correct behaviour, the newly appointed generals radically limited the previously commonly provided information about intentions for the further development of the MTC.

The presence of personnel from communist Czechoslovakia at the MTC became gradually seen in Cairo as an unpleasant affair that could complicate relations with France and Great Britain. With the influx of Egyptian teachers trained in Czechoslovakia, the college began to become more and more self-sufficient, and the need for Czechoslovak advisors steadily decreased (the postgraduate studies of Egyptians were conducted at the VAAZ and an additional 25 Czechoslovak training workplaces staffed by personnel from eight civilian universities and research institutes). However, the Egyptians were very well aware that the presence of Czechoslovak personnel was still crucial in some areas. Hence, Major General Shawki Sharif did not take a strong position for fear that Prague would end its assistance on behalf of the MTC prematurely.[4]

THE TERMINATION OF THE ASSISTANCE FOR THE MTC

In 1975, Egypt tried to obtain modern weapons and military hardware from the West. Concurrently, Cairo began to limit cooperation with communist countries, especially the Soviet Union and Czechoslovakia, by reducing the number of their military advisors in Egypt. The number of Soviet experts at the Nasser

A T-55 medium tank of the Egyptian Army comes ashore from the LCU-1644 landing craft during Bright Star '85 - a joint exercise of the Egyptian and US armed forces. (US Department of Defense)

Military Academy was reduced by 80 percent and the number of Czechoslovak specialists at the MTC by almost 50 percent.

Besides, the MTC began to be visited by Western military experts and representatives of armaments companies. The documentation of Western weapons that were delivered recently to Egypt or that were expected to be imported started to appear in the college's departments. In connection with this development, the Egyptians also began scientific training and internships for their students in Western European countries.

In the meantime, Czechoslovakia began to lose the privileged position at the MTC due to the French who established there a well-functioning computer centre with an IRIS-50 computer. The MTC leadership sent the personnel necessary for its operation to training in France. On top of that, in late 1975, 10 assistant professors were dispatched to France for full-time postgraduate study.

One of the important lessons from the Yom Kippur War for the Egyptian Armed Forces was the recognition of the importance of electronic warfare on the battlefield. For this reason, the VAAZ was asked by the Egyptians to establish such specialisation on the MTC. However, the Czechoslovak reaction was only reluctant. Electronic warfare was an extremely sensitive matter within the Czechoslovak People's Army. Besides, the leading role in this sphere within the Warsaw Pact states was played by the Soviet Union which was basically the sole producer of surveillance and jamming electronic warfare systems for all Soviet Bloc armed forces. And on top of that, the VAAZ had only two experts in this field at that time. While this question remained open for several subsequent years from the Czechoslovak side, the Egyptians were searching for the solution to their demand in other countries. Thus, Czechoslovak advisors at the MTC were surprised when the college was visited in March 1977 by a group of seven French electronic warfare experts who were attached to the General Staff of the Egyptian Armed Forces. Even more disturbing for them was the fact that the French had an English machine translation of a two-part Soviet manual on electronic warfare.

Meanwhile, the political situation further deteriorated in March 1976 when President Sadat abrogated the friendship treaty with the Soviet Union. Prague decided not to further increase its participation in the MTC and set the current number of its advisors there as the limit for the following years.

With this background, on 18 May 1976, Lieutenant General Jaromír Machač discussed further Czechoslovak involvement at the MTC with the Soviet chief military advisor to Egypt, General Borovikov who reaffirmed the view that it would not be right to take the initiative to terminate the cooperation in building the MTC and, at the same time, that it would not be right to impose on the Egyptians if they are not interested. Thus, Prague was relegated mostly into the role of a passive observer.

The first sign of things to come appeared in June 1977, when Egyptian officials hastily recalled 73 Egyptian engineers from full-time postgraduate studies and seven additional students from postgraduate studies at the VAAZ in Brno. This meant that the plan to complete the training of the MTC scientific and pedagogical staff was largely disrupted. However, the events gathered momentum very fast. On 13 July 1977, the commander of the MTC informed Lieutenant General Machač that the contract for Czechoslovak assistance would not be renewed. At the same time, he set a date for the Czechoslovak advisors to leave the college on 1 September 1977. This marked the definitive end of Czechoslovakia's military advisory activities at the MTC and therefore in the whole Egyptian Armed Forces.

The activities of Czechoslovak advisors at the MTC were terminated on 31 August 1977. Subsequent analysis of the Federal Ministry of National Defence summarised the course of these developments as follows:

An Egyptian L-39ZO as seen at the LOTN aircraft repair plant in Trenčin, in 2002. (Photo by Miroslav Gyűrösi)

> According to Egyptian officials, economic reasons led the Egyptian side to make these decisions. In reality, however, they were clearly politically motivated. The immediate impetus for them was probably Saudi Arabia's decision to finance the building of the armed forces of the Arab Republic of Egypt in the next five years. Another reason was probably the dissatisfaction of the Egyptian places with the Czechoslovak party's course of action in fulfilling the contract concerning the supply of tanks and the discontent with the growing assistance of the Czechoslovak Socialist Republic to neighbouring Libya. The main reason, however, is the fact that the presence and activities of the Czechoslovak experts at the MTC, as well as the stay and scientific training of Egyptian assistant professors in the Czechoslovak Socialist Republic, necessarily came into conflict with the current Arab Republic of Egypt reactionary course, among others for the political effect that had both basic forms of the MTC mission in influencing the Egyptian members of the MTC teaching staff and students.

Between 1959 and 1977, a total of 2,349 Czechoslovak specialists provided assistance at the Military Technical College in Cairo. With their help, a military university was built that up to 1977 trained more than 2,000 military engineers and exceed the borders of the Arab Republic of Egypt, as many members of the armed forces of other Arab countries such as Syria, Iraq, Libya, and Sudan studied there. With its attained level of quality, the MTC became Egypt's prominent technical university.[5]

CHINESE INVOLVEMENT

The end of military cooperation with the Soviet Union, Czechoslovakia, and other Warsaw Pact countries opened the door for the involvement of the People's Republic of China. The report of the Czechoslovak Federal Ministry of Foreign Affairs from July 1980 observed:

> The Arab Republic of Egypt has expressed interest in new supplies of military hardware and spare parts for Soviet-made weapons. This cooperation is beneficial for the Egyptian side, as Chinese military assistance is provided on favourable financial loans and is repaid in finished products for which Egypt cannot find demand in other markets. However, the supplied spare parts for Soviet weapons are of poor quality and do not meet the required technical requirements.

The other analysis commented on Sino-Egyptian military relations in 1981 as follows:[7]

> In the military sphere, deliveries of spare parts for tanks and aircraft engines for MiG airplanes were discussed. The Egyptian delegation called for an acceleration in the supply of spare parts for T-54 and T-55 tanks, which are manufactured in the People's Republic of China under a Soviet licence. It was stated that due to the lack of spare parts, 1/2 of the tanks in the Egyptian Army are unable to fight. Another issue discussed was the request of the Egyptian side to increase the number of Chinese military experts in the Arab Republic of Egypt to carry out repairs of military hardware. The main emphasis was placed on improving the qualification of existing experts, with whose activities the Egyptian side has expressed dissatisfaction so far. The People's Republic of China promised to accelerate the supply of the required spare parts and offered the possibility of supplying MiG-17 aircraft, which are manufactured in the People's Republic of China. Negotiations on aircraft deliveries have been postponed due to payment difficulties.

9
THE WAY TOWARDS RECONCILIATION

Whatever the Chinese military aid, it could in no way replace the direct participation of Czechoslovakia. This was probably felt most acutely in the case of the L-29 Delfin jet trainers which were left without a proper supply of spare parts and professionally performed general overhauls.

Although the political relations between Prague and Cairo were frozen, business transactions continued, with a short interruption after 1977, basically as before the rift. Therefore, this development followed the Soviet line which stipulated that economic relations with Egypt should be pursued on the ground of financial

advantageousness for Prague. After some time, apparently in February 1981, Egypt even cancelled the boycott of cotton exports to Czechoslovakia and resumed debt repayments for the old supplies of Czechoslovak weapons.

Thus, this situation created conditions for a possible resumption of Czechoslovak military assistance, as observed in an analysis of the Czechoslovak embassy in Cairo from July 1983: 'A similar situation is being created in the area of supplies of special materials, where the diversification of Egyptian purchases in different countries is pushing the political aspect into the background and deliveries of special materials are increasingly becoming a matter of economic calculations alone.'[1]

In the background, Egyptian diplomatic officials were seeking ways to improve relations with Czechoslovakia. However, these efforts were completely ignored by Prague for two years. Therefore, it was only in January 1984, when the first contacts between Czechoslovak and Egyptian diplomats took place after seven years of frozen relations. At the level of deputy foreign ministers, political consultations took place in Cairo, which confirmed the mutual interest in the normalisation and development of relations in various areas.[2]

NEW OUTLOOKS

Meanwhile, the first contacts between Czechoslovak and Egyptian officials with regard to possible restoring of arms shipments from Czechoslovakia took place. Thus, on 30 June 1982, General Ismail Hassanein, retired Chief of the Requirements Department at the Ministry of War, contacted the chief of the business department (and at the same time the HTS official) at the Czechoslovak embassy in Cairo Karel Hála and requested the delivery of 50,000 fuses for 122mm ammunition. According to Hála's report, 'General Hassanein openly said that he was being sent to me by the Ministry of Defence because it is known there that we had met very often before. The ammunition is for Iraq. If it helps to argue at home, I can use it according to General Hassanein.' Although the outcome of this meeting remains unknown, more important events happened just several months later.

Prague decided to deliver 20 M-701 engines for Egyptian L-29 Delfin trainers up to the end of 1982 and to carry out the general overhauls of 10 airplanes in 1983. Deputy Prime Minister and Minister of Foreign Affairs Kamal Hassan Ali was personally involved in the supply of spare parts and technical support for the L-29s. When Ambassador in Egypt Slavomír Novák informed him about this approval on 6 December 1982, Ali:

> expressed pleasure and thanked the Czechoslovak places for this approach. He emphasised the particular importance of the supply of high-quality L-29 spare parts and repairs of L-29s which are of high quality. They are irreplaceable for the training of Egyptian pilots. On a note about the licenced production of Alpha Jets, he said that it is a different type of aircraft, which, in addition to training characteristics and characteristics for other uses, is more complex and also very expensive.

A similar development prevailed in relations between Egypt and other states of the Warsaw Pact, and so, for example, East Germany concluded a contract for the repairs of MiG-21 fighters. During negotiations in Prague, a protocol for supplies of spare parts was signed in early June 1983. In autumn of the same year, Major General Ahmad Marzook requested delivery of 150,000 7.62mm assault rifles and an offer for the L-410 Turbolet transport airplanes. At the same time, he expressed interest in potential cooperation in their production. In 1986, Prague resumed partial supplies of military hardware and services to Egypt worth 1.6 million USD.[3]

ALBATROS TRAINERS

During his official visit to Egypt, Czechoslovak Minister of Foreign Affairs Bohuslav Chňoupek held a meeting with Egyptian President Hosni Mubarak on 27 April 1988. 'The President said that he was seeking for the all-round development of relations with the Czechoslovak Socialist Republic, including the military area, and had already ordered the purchase of Czechoslovak L-39 aircraft. He knows the excellent quality of Czechoslovak machines because he trained on the L-29.'

However, the requirement for deliveries of L-39 Albatros was not new at all. Although Egyptian Minister of War Ahmad Ismail Ali requested a supply of at least 15 airplanes of this type in April 1973, no contract for their acquisition was awarded. Another opportunity arose during negotiations between the HTS representative and the Egyptian Air Force chief engineer Air Vice Marshal Arif on 22 February 1976. The negotiations showed that the Egyptian Air Force was interested in the delivery of 50 Albatros aircraft of the combat version within two years of signing the contract. However, due to the strained relations between Prague and Cairo following the Soviet-Egyptian split, no deal took place.

The Egyptian effort from the late 1980s to obtain Czechoslovak jet trainers was motivated by technical problems that plagued the fleet of Alpha Jets. For this reason, Mubarak accepted the Libyan proposal for the shipment of up to 40 L-39ZO Albatros trainers from the inventory of the Libyan Arab Republic Air Force. Although this scheme was made public by the Libyan leader Muammar Gaddafi as early as 1990, in the end, Libya donated just 12 L-39ZO aircraft which were delivered in the years 1992 and 1993.

Much more important was the agreement for the delivery of 50 L-59E Super Albatros light combat and training aircraft, which Egyptian representatives signed with Aero Vodochody in 1992. The newly acquired aircraft were to replace the old L-29 Delfins and ensure the unification of the fragmented fleet of training aircraft of the Egyptian Air Force. Since one L-59E was destroyed during the crash at the Aero Vodochody factory airfield in September 1993, the Egyptian Air Force received 49 airplanes that were delivered between 1993 and 1994. Unlike the L-29 Delfin, the L-59Es never enjoyed such success and their service in Egypt was hampered by numerous technical problems.[4]

Table 21: Overview of L-39 Albatros and L-59 Super Albatros aircraft delivered to Egypt, 1992-1994[5]

Year	Variant	Number of examples	Note
1992	L-39ZO.1	4	delivered from Libya
1993	L-59E	26	newly built
1993	L-39ZO.1	8	delivered from Libya
1994	L-59E	23	newly built

THE DEBTS

While Prague was making steps towards securing new arms deals with Cairo in 1989, Moscow was still sceptical about such propositions: 'So far, the Soviet side has not decided to resume military cooperation. However, in the case of payments in hard currency, friends [i.e. the Soviets] are ready to sell spare parts for

previously delivered special equipment. The Soviet side agreed to postpone the payment of Egyptian debts until 1991.'

Due to the rapid decline of orders for armoured vehicles manufactured in Czechoslovakia, Prague made every effort to sell BVP-2 infantry fighting vehicles, T-72 main battle tanks, and their derivatives. Thus, the Czechoslovak authorities were only partially satisfied when, in early April 1989, Deputy Chairman of the Council of Ministers of the Union of Soviet Socialist Republics Igor Belousov gave Soviet consent with the export of VT-72 armoured recovery vehicles and MT-72 armoured bridge layers to Egypt and North Yemen from 1989. Since, at the same time, the Soviet official added that 'the supply of T-72 battle tanks to Egypt, the Yemen Arab Republic is currently not recommended.' Despite this incomplete approval, no armoured vehicles manufactured in Czechoslovakia were delivered to Egypt since the partially cancelled Contract No. 31-6-42 for the delivery of 220 T-55 series vehicles from 1975.

Besides, in the late 1980s, Prague began to be preoccupied with the Egyptian ability to repay all debts to Czechoslovakia. As of September 1989, the Egyptian debt amounted to approximately 180 million USD. Hence, this issue appeared on the top of the agenda of Prime Minister Ladislav Adamec during his official visit to Egypt between 17 and 19 October 1989:

> At the very end of the negotiations, an agreement was reached on the settlement of a substantial part of due receivables from government credits (11.7 million USD) and all due receivables from corporate credits (3.7 million USD) and their use for consumer goods, tourism, payment of the costs of the Czechoslovak embassy in Cairo and for investments in joint companies in Egypt.
>
> In comparison with the solution of the issue of due receivables of other creditors of the Arab Republic of Egypt, the result achieved is extraordinary for the Czechoslovak Socialist Republic.

A month later, the communist regime in Czechoslovakia collapsed. However, the remaining Egyptian debts remained unpaid for many years to come.[6]

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